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الرابطة لأجل تطوير التربية في إفريقيا
Association for the Development of Education in Africa
Association pour le développement de l'éducation en Afrique
Associação para o Desenvolvimento da Educação em África

**Triennial on Education and Training in Africa
(Ouagadougou, Burkina Faso, 12-17 February 2012)**

Promoting critical knowledge, skills and qualifications for sustainable development in Africa:
How to design and implement an effective response through education and training systems

Sub-theme 3

Use of ICTs in Education and Training for Enhanced Capacity



Using ODL And ICT To Develop The Skills Of The Unreached

A contribution to the ADEA Triennial of the Working Group on Distance Education and Open Learning

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ADEA/C/2011/057

ADEA/C/2011/058

ADEA/C/2011/060

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Table of Content

Abstract.....	2
Executive Summary	3
Foreword	6
Acknowledgement	7
1. Technology and Learning	8
2. The utilisation of ICT in the delivery of ODL in rural Africa: Reaching the unreached	11
3. Tools and Strategies for supporting Distant Learners	27
4. ODL and ‘The Forgotten of Africa’: The scope and implications for educating African prisoners online.	58
5. Lessons Learnt	73
6. Policy Recommendations	75
7. Key References and Annexes	78

Acronyms

ABLE-Ghana Project	Advancing Business Learning for Employability in Ghana
AR	Augmented Reality
BGCSE	Botswana General Certificate of Secondary Education
BOCODOL	Botswana College of Distance and Open Learning
CSC	Community Study Centres
DBIS	Department for Business Innovation & Skills (DBIS)
HEAT	Health Education and Training
ICT	Information and Communication Technology
LSC	Learning Satellite Centres
ODL	Open and Distance Learning
OERs	Open Educational Resources
OU (UK)	The Open University, United Kingdom
OUBS	Open University Business School
QR	Quick Response
RNPE	Revised National Policy of Education
SADC-CDE	Southern African Development Centre for Distance Education
TESSA	Teacher Education in Sub-Saharan Africa
TGF	Tutor Group Forum

Abstract

Innovation in technology is occurring at rapid pace thus shrinking the distances and making information and knowledge more than ever accessible to everyone irrespective of where the person resides. This paper consists of four main articles. The first one deals with technological trends. The second one focuses on the deployment and use of open and distance education mode in rural areas by documenting initiatives that embrace information and communication technologies (ICTs). Due to challenges faced in rural areas only a few success stories/cases currently exist and some of these are cited in this article. The challenges faced in the deployment of ICT enhanced ODL have been highlighted as well as the potential of developing and delivering effective and relevant ODL programmes in rural areas in order to ensure that issues of educational equity and social exclusion rural communities are adequately addressed. ICTs in ODL are perhaps the greatest tool to date for self-education and value addition to any community's development efforts, yet poor rural communities particularly in Africa do not have the necessary awareness, skills or facilities to enable themselves to develop using ICTs. Inadequate ICT infrastructures in rural areas remain a major source for the digital divide in Africa and for under-performance of distance learners. The third one analyses the support provided to ODL learners who often encounter difficulties in completing their studies through the distance education mode due to loneliness, uncertainties and de-motivation. ICT has not been able to sufficiently support distance learners in overcoming those obstacles efficiently. An investigation regarding those learning supports has been conducted in ten distance learning institutions, along with an intensive literature review with the aim of understanding the high percentage of dropout rates of distant learners. The learners' interactions have been scrutinized through content analysis of their synchronous exchanges, during a completely online course. After taking into account the limited technical and human resources in Africa, a technological virtual environment along with a pedagogical framework has been proposed with the aim of giving adequate educational support to them. The fourth article has explored The Open University (UK) and its efforts to use new technologies to deliver online courses to difficult-to-reach learners in prison environments. The case study analysed here is an international course (called, B201- Business Organisations and their environments) which also touches an African cohort of learners. The implications for designing and delivering online ODL to the complex unreachable environments of prisons anywhere, and particularly in Africa, have been discussed.

Executive Summary

Activity streams, wireless power, Internet TV, quick response (QR)/colour codes, media tablets, in-memory database management system and private cloud computing are profoundly changing the way we teach and learn in this highly wired world. Use of social media such as FaceBook, Twitter as well as Blogs, QR codes and mobile apps with Augmented Reality in the academic realm is improving interactivity between user and content provider. As a result, there is a shift from *delivery* of content to *discovery* coupled with a movement from “one size fits all” to “a unique size for every person”. Through the effective use of technological advancements, learners can acquire tailor-made and personalised learning materials that will not only increase their chances to succeed several folds but contribute towards making them lifelong and life-wide learners who can contribute meaningfully to the society.

ICTs in ODL are perhaps the greatest tool to date for self-education and value addition to any community’s development efforts, yet poor rural communities particularly in Africa do not have the necessary awareness, skills or facilities to enable themselves to develop using ICTs (Gray & Sanzogni, 2004). Inadequate ICT infrastructures in rural areas remain a major source for the digital divide in Africa and for under-performance of distance learners. The deployment of open and distance learning in rural Africa is still heavily depending on printed media. This is due to the digital divide that obtains between rural and urban areas despite efforts by African governments of embracing ICTs, for example by developing ICT national policies and ensuring that ICTs are taken on board in their national development plans as a cross-cutting issue. The National ICT policies are meant to guide the deployment and utilisation of ICTs in all sectors including distance education. The inadequate ICT infrastructure across rural Africa and the unavailability of dedicated national ODL policies negatively affect teaching and learning using the ODL mode.

Attempts at using ICTs in ODL and initiatives at developing dedicated national ODL policies have begun in some African countries. These efforts have the potential to ensure equity in the provision of education to rural communities through ODL. There are also interesting developments in some African countries with regard to open educational resources and in the use of mobile cellular-phones in supporting distance learners. However, the challenges of internet connectivity in most rural Africa continue to hinder access. The other challenges that hinder effective usage of ICTs in the deployment of ODL in rural Africa include the relevance of content on the internet where internet is available, inadequate capacity of ODL providers and generally inadequate ICT skills on the part of ODL teachers and distance learners in rural areas. Some highlights of success cases and challenges that serve to showcase progress, challenges and prospects of ICT enhanced ODL deployment in rural Africa cited are from Botswana.

Distance education is yet to yield the expected results with regards to its contribution to increasing knowledgeable and skilled human capacity. Distance implies lack of proximity and no

immediate interactions. Instead, factors like loneliness, uncertainties and de-motivation are associated to distance education. In this respect, the purpose of this research has been to investigate on the use of the Distance Education coupled with Information and Communication Technology (ICT) in order to enhance the educational processes for better outputs. Improving human resources is a key investment for a better economic growth and quality standard of living.

In Africa, there is an increase in the number of distance education institutions because education is a necessity and is therefore a promising business. Such institutions which mainly give administrative supports to the learners require no heavy infrastructural investments. Thus access to open and distance learning is available since a century already. However, with the low rate of successful completion of courses by distant learners every year, there need for investigating on the learners' problems as well as identifying relevant supports which are needed to help them in their studies.

Traditional classroom education is the mostly widely chosen and preferred mode of schooling. However, it is not easily accessible to all and it has not proved to be successful for all types of students in different situations. The impact is severely felt today, especially in the developing countries. Those who are not able to integrate this system are excluded as they are left more and more behind as time goes by, till they are qualified as unreached. For quality education, the needs of the country, the society and those of the students should be assessed and relevant systems have to be put in place in order to support all students in their learning process. The conventional face-to-face education is not accessible and convenient to all thus it does not give an equitable chance to all.

It is imperative to strive towards building learner-focused educational systems with the relevant supports that distant learners require. With the advent of technology and the Internet, it is important to note that learners evolve in a digital world with easy access to information. Taking into account the African context, the opportunities and challenges of distance learners, relevant supports and practices are mounted with the aim of reaching the unreached.

With its synchronous and asynchronous tools, ICT has got the capabilities of reaching online learners anytime from any place at their preferred pace. They are now able to reach their tutors and interact with them conveniently.

Learners are distracted easily with the varieties of interesting applications available online. By integrating the relevant tools together in an online learning environment, the learners are more prone to collaborate online with the aim of discussing on common issues such as problem solving. As pointed out by Maslow's hierarchical needs, a proper environment is a fundamental requirement for a stable, secure evolution of an individual. Therefore it is imperative for learners to be given such basic stability in order for him to progress in his learning process.

Moreover, there is a need for a pedagogical framework which will define and focus on the learning processes, such as defining the chosen educational mode (behaviorist, constructivist, socio-constructivist), learning strategies and supports as well as the promotion of individuals' interactions. This framework aims at securing, promoting, encouraging, teaching and learning to take place while focusing on the learner's needs.

To better support distant learners the institution has to set up proper learning environment as well as develop, with the help of experts, relevant and interactive course materials. The best learning strategies also have to be devised to enable interactions and learning to take place, with defined deadlines for the completion of the course. Local tutors need to collaborate with experts around the world in order to build learning materials with existing learning objects.

For learning to be effective, the stakeholders must have defined roles. More than before, the tutors are asked to play important roles in supporting distant learners. They are no longer requested to reach the learners through his discourse; instead, they are called upon to listen to the difficulties and learning needs of the learners. Tutors are expected to give the administrative, technical, pedagogical and psychological supports accordingly and relevantly. Real time, constructive feedback is of prime importance to distant learners.

Learners are encouraged to interact with the learning environment, the communication tools, the learning objects, the course content, the tutor and peers. The more they interact, the more chance they have to increase their knowledge and persist in their studies. The responsibility of learning resides on the learners and it is important for them to be skilled in using technologies and develop their abilities in working in groups. They should be objective-oriented, determined, motivated, disciplined, responsible and pro-active in their learning endeavor.

The 'Forgotten of Africa', a term originally coined by a New York Times reporter Michael Wines, refers to the prisoners of African prisons, arguably considered not only to be unreachable but forgotten by any standards of human consideration, let alone in matters of education.

As a central theme, what this paper considers the scope and implications for educating the African prisoner online via ODL by drawing from the experiences of designing such a course for prisoners by the Open University in UK. The OU is a world leader in the field of open and distance learning. It has more than 40 years' expertise in opening up opportunities to high quality higher education and pioneering the use of new technologies in teaching. It firmly believes that ODL supported by new information and communication technologies (ICT), has the potential to bring education within reach of far more people, at much greater speed and less cost than is involved in building traditional brick-and-mortar universities anywhere.

Exploring OU's deepening roles in Africa and the paper allows for an understanding of OU's blended methodology to designing and delivering courses and at the core by looking at the case of a course called B201 – Business Organisations and their Environments and how it was adapted as a product to suit the demands and needs for students in prisons. It draws attention to some pedagogical issues in the design of teaching and learning of online courses for prisons. It also highlights some of issues faced by higher education teachers supporting students in the prison setting, drawing attention to matters relating to access, the nature of the teaching and learning environment, and some practical and ethical concerns associated with e-learning and the problem of prisoner/student identity. The analysis considers the author's experiences as Course Chair of B201 for the past three years and as an academic member of the team who designed and produced this course both in its online and offline forms. While the prisoner/student experience varies considerably across African prisons, the literature suggests that the issues discussed in this case have relevance for teaching online in a variety of prison settings.

Africa's education systems are at the heart of Africa's future and there is now an urgent need to revitalise ODL providers so that they play a bigger role on this future and in reaching the far ends of society to improve the chances for equal access to education for all, even if they are in prisons

Foreword

This report on “*Using ODL And ICT To Develop The Skills Of The Unreached*” is commissioned by ADEA for the 2012 Triennial to be held in Ouagadougou, Burkina Faso. It is a contribution of the Working Group on Distance Education and Open Learning (WGDEOL), with a support from three experts. It belongs to Sub-Theme Three of the Triennial, entitled “*Lifelong acquisition of scientific and technological knowledge and skills for sustainable development of Africa in the context of globalisation*”.

Following the introductory sections (Foreword, Acknowledgements, Acronyms, and Executive Summary), this report is divided into the following six major sections, each focusing on a specific aspect of the study:

- The first section discusses the trends in technology and its impact on learning;
- The second section examines the utilisation of ICT in the delivery of ODL in rural Africa with a focus on Botswana;
- The third section analyses the tools and strategies necessary to ensure that ODL learners are successful;
- The fourth section discusses a concrete example of how ODL is being used to reach the difficult-to-reach prisoners;
- The fifth section presents the lessons learnt; and
- Last, the report advances a few policy options.

Views expressed in this report are those of the authors, and not necessarily those of the institutions that they work for. Therefore, the authors bear responsibility for the report in terms of its content and structure.

Kaviraj Sharma Sukon, Ph.D.
Principal Coordinator

Acknowledgement

Putting together a report of this study has been through the hard work of some people and the contribution of institutions to recognize here.

Our warm thanks go to Dr Dev K Boojihawon, Dr Godson Gatsha and Dr Shireen B Panchoo for their contribution.

We are grateful to the ADEA Executive Secretariat, Forum of African Ministries of Education and to partner agencies for their political back-up and their technical and financial supports.

This is our hope that the study contributes to achieving EFA goals and the MDG and, by the way, contributes to easing the conditions of everyone especially the unreachable ones. We believe that effective use of ICT in Open and Distance Learning is a greater equalizer of educational opportunity and provides large numbers with the chance to continue their education.

1. Technology and Learning

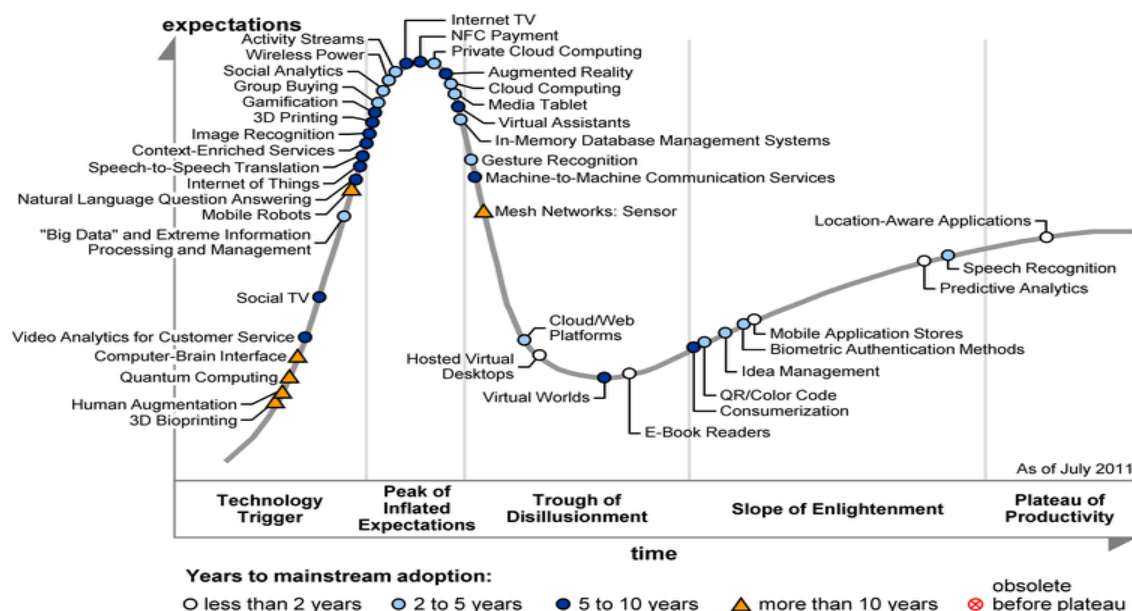
1.1. New Trends in Technology

We are living in an era where technology is shrinking geographical and cultural distances in the world by enhancing communication, increasing networking opportunities and bringing information to our doorsteps. 1.9 billion people sent 107 trillion emails in 2010¹. There are 65 million daily tweets on Twitter. There are more than 70 millions of blogs. 2 billion videos are viewed daily on YouTube. 500 million people have a Facebook account and 250 million of them log in everyday with 48% of 18-34 year olds checking Facebook when they wake up. In just 20 minutes on Facebook over 1 million links are shared and almost 3 million messages are sent. One out of every three users of Facebook is an adult of 35 years or more². Innovation in technology is moving even faster than we can imagine as shown in Gartner's Hype Cycle for Emerging Technologies (Figure 1). Activity streams, wireless power, Internet TV, quick response (QR)/colour codes, media tablets, in-memory database management system and private cloud computing can profoundly affect the way we live. Even the film projectors developed in 1889 for motion pictures are being replaced by digital ones that play 3D movies.

Figure 1. Gartner's Hype Cycle For Emerging Technologies 2011

¹ <http://gigaom.com/2011/09/20/our-world-connected-changing-infographic/>

² <http://www.digitalbuzzblog.com/facebook-statistics-stats-facts-2011/>



Source: Gartner (2011)³

1.2. How technology is changing the way we learn?

The technological advancements are increasing the array of learning opportunities. Academics more and more use social media such as use Twitter, LinkedIn, Facebook and other services to share links and posts while online learning-related chats and discussion forums engage people around the globe. Lectures and talks are recorded on videos for later use as well as uploaded on YouTube. Blogging continue to prove a worthy medium for teaching, discussion and learning. Several short courses are already available on mobiles. With the increasing number of mobile apps and smart phone users throughout the world, it is not long before mobile learning would be fully integrated. Augmented Reality is likely to become one of the main tools for mobile learners as it provides location-based services. For example, AR applications can add historical objects to the picture of a learner's surroundings as s/he moves through a town. Portable books and learning materials as well as educational apps available on aesthetically designed interfaces such as those of iPads are boosting interactivity. Technology has also boosted the publication of ebooks which provide a very convenient and richer way of learning. In order to avoid the mind numbing presentations and lectures, 3D virtual world software is being proposed as alternatives to 2D presentations. Integrated 3D platforms are like to improve interactivity further by promoting multi-learner simulations. QR codes are transforming our traditional libraries by providing comprehensive information to the user.

³³ <http://www.gartner.com/it/page.jsp?id=1763814>

1.3. Shifting from “delivery” to “adaptability and discovery”

One of the fundamental assumptions of the traditional method of teaching and learning is that learners in a classroom are homogeneous. In this model the same content, often packaged in a closed and finite container, is *delivered* to all the learners irrespective of their learning abilities and styles. As a result, the extents to which different learners, who have been exposed to the same instructions, learn vary widely. This is indeed one of the major reasons for failure. Use of interactive materials, search facilities, ebooks, recorded video lessons, and QR codes will promote adaptive learning and help learners to move towards *discovery*. Even assessment for learning has the potential of becoming more enjoyable. This movement from “one size fits all” to “a unique size for every person” is accelerated by shift from narrowcasting with the advent of cable TV to nanocasting with customized distribution channels. The learner is likely to be part of the content production, packaging and distribution. The learner is likely to accept to siloed content passively. Cloud computing is likely to play a pivotal role by freeing users from the tether of their local hard drives and other boundaries that have separated them from content and other users. Through the effective use of technological advancements, learners can acquire tailor-made and personalised learning materials that will not only increase their chances to succeed several folds but contribute towards making them lifelong and life-wide learners who can contribute meaningfully to the society.

1.4. ODL and Technology: The Convenience of Time and Space

The progress in Open and Distance learning is closely linked to the advancements in technology. ODL has moved far from the correspondence courses started in Europe (Imel, 1996) and the use of radio taped and videotaped lessons sent through mail (Moore & Lockee, 1998; Teaster & Blieszner, 1999). Today, the Internet and technology has taken distance learning in new directions, allowing distance learning to occur in real time. Live video instruction is the becoming the fastest growing delivery mode in the United States (Ostendorf, 1997). ODL has become popular for various reasons. One of the main reasons is financial as class size increases while the overhead remains the same especially when delivering education to students that are unable to attend classes because of time or distance. The Australian Curtin University uses compressed video conferencing to reach remote students in Western Australia, and to enhance classes in Business Studies by connecting with students in Singapore. Advances in technology such as cloud computing has can help universities and content providers to control their costs, improve quality of instruction, focus on customer needs, and respond to the competitive pressures. ODL has the potential of meeting increased demands at a time of decreased resources. The other main reason is the convenience of time and space. Students in remote areas as well as students with disabilities don't have to move to crowded cities to learn.

1.5. Its Teach not Tech

Palloff and Pratt (2000) remind us that “technology does not teach students; effective teachers do” (pg. 4). Technology itself is not the issue but how it is used in the effective and efficient design and delivery of lessons. Poorly designed courses can have serious negative impact on the quality of the instructions. According to Omoregie (1997) the designers' and instructors' commitment and a comprehensive understanding of the needs of the learners as well as adopting a positive attitude by not viewing ODL as second rate, and willingness to re-design learning

materials to fit ODL framework, can enhance the effectiveness of ODL greatly. The power of technology has to be harnessed in the design of ODL courses. Therefore it is vital the designers and instructors are well trained so as to use all the potential technology has to offer. The transition from traditional modes of teaching to ODL may prove to be disastrous if teachers are not sufficiently trained. ODL has its own pedagogy and andragogy. The best distance education practices depend on creative, well-informed instructors (Greenberg, 1998). The instructors, technicians and administrators must be trained “not only to use technology, but also to shift the way in which they organize and deliver material” (Palloff & Pratt, 2000, pg. 3). Technology should not be used to replicate traditional methods and as a substitute to face-to-face instruction but to improve learning as well as taking education to the doorsteps of the learner in a form that best appeals to him/her. McKnight (2000) states that proximity and eye contact are important factors in education that are limited in the distance learning environment. She says that we inherently recognize the connection these provide, but in the distance learning environment they are “both severely and sometimes permanently compromised” (pg. 2). 3D virtual worlds and highly interactive environments can help instructors to observe and respond to emotions of learners. ODL instructors’ efforts must be duly recognised as preparation of ODL materials is more time consuming as compared to face-to-face lessons. Learners must also be well prepared before embarking on ODL courses. The successful ODL student must be focused, able to work independently and with fellow group members as well as have a number of other characteristics such as tolerance for ambiguity, a need for autonomy, and an ability to be flexible (Threkeld & Brzoska, 1994; Hardy and Boaz, 1997).

2. The utilisation of ICT in the delivery of ODL in rural Africa: Reaching the unreached

Godson Gatsha

2.1. Who are the Unreached?

The deployment of Open and Distance learning in rural Africa is a challenge. The unreached remain unreached due to challenges that include geographical context, remoteness and other socio-economic factors. The questions that immediately rise include the following: Who are the unreached? How are their educational rights currently being handled? What is open and distance education and how can it be used to reach the unreached? What is the potential of using ICTs in ODL to reach the unreached and increase access and success in their educational endeavours? What are the initiatives being made by one typical African country in reaching the unreached? What are the current challenges the hinder the utilisation of ICTs in ODL? What can be done to scale up ICT uptake in the delivery of ODL for reaching the unreached in rural Africa?

The unreached in rural Africa are currently not being reached by the following sectors due to their remoteness and geographical context which prohibits easy access and delivery of the much needed services enjoyed by the rest of other communities in each African country. The unreached are not being reached for instance by education and health service providers. The unreached are not able to access the quality of education provided to the dominant groups in any country. The unreached include marginalised rural communities most of whom are indigenous peoples. Whilst the term indigenous is a highly contested term it is used here to refer to the first people who occupied different territories before the arrival of the Bantu speaking groups and colonists in the territories they occupied for instance, the first people to occupy southern Africa are the Basarwa or San and;

...share a distinct and identifiable cultural 'deep structure' that most commonly manifests in language, social organisation, economic activity, religion, and historical experience (Suzman, 2001:3.)

They consider themselves distinct from other communities and other communities do recognise them as such. The Basarwa's social, cultural, and economic conditions distinguish them from other populations in Africa. They are determined to develop, preserve, and transmit their culture to their future generations (Begum and Al Faruque, 2005). Currently indigenous groups live in underdeveloped contexts that is physical areas within a developing countries characterised by distorted or inadequate development. Mainly those in power impose change and the community suffers (Stuart, 1994). Underdeveloped contexts are characterised by very low economic development in that they lack investment, public infrastructure and offer very low standard of living. This is the case in most remote rural parts of sub-Saharan African countries. They are therefore marginalised because they are deprived of access to social opportunities and financial or material means for well-being and security (Commonwealth of Learning, 2004). In the words of Molteno, (1988:1):

The 'marginalised' are the poor and powerless, too busy with life at the edges of survival to be able to acquire the skills or material support that would let them get out of the trap they were born into, or have been pushed into. They are unable to scramble on board as the engine of change hurtles the rest of us onward – where, we can't tell, but we're holding on because the alternative is too scary. The marginalised remind us of that.

Basically they live in poverty and that is they do not have the ability to meet their own basic needs. Basic needs refer to nutrition, access to adequate shelter, clothing, recreation and the ability to meet social commitments (Nteta et al., 1997). Poverty also implies a lack of choices, in other words, having no alternatives and most of the unreached peoples in rural Africa are not an exception to the poverty described above. Actually, the unreached are more often also defined by their geographical context. Botswana's case is used below as a typical case for the unreached rural indigenous communities that is the Basarwa (San or Bushmen as they are sometimes referred to).

2.2. Geographical and social context of marginalised communities in Botswana

Botswana is a landlocked country, roughly the size of France or Texas (Nage-Sibande, 2005; Tlhalefang and Oduaran, 2006). It is located in southern Africa and shares borders with Zambia to the north, South Africa to the south, Zimbabwe to the east and Namibia to the west. It has an area of 582 000 square kilometres, of which 84% is covered by the Kalahari Desert (Hanemann, 2006; Pfothenhauer, 2009). The eastern part of the country is occupied by the Tswana-speaking groups and has good soils and rainfall for agriculture. The Basarwa and the Bakgalagadi communities, along with other ethnic groups currently inhabit part of the Kalahari Desert in the western part of Botswana. This semi-desert area has no permanent surface water, poor soil, great variation in rainfall (between 150 mm and 375 mm) and frequents droughts (Saugestad, 2005). It also has extreme seasons with temperatures reaching 39°C in summer and dropping to below 2°C in winter (Botswana Government, 2003). The climatic conditions are not favourable for practising even subsistence crop cultivation; hence, the communities are not able to produce enough food for survival from arable farming initiatives. However, the area has bush and shrub savannah vegetation that attracts wildlife, hence hunting and gathering activities have been part of the communities' traditional lifestyle for a long time.

Botswana has a relatively small population, estimated to be about 1.85 million (Pfothenhauer, 2009). The Tswana-speaking group account for almost 90% of the population whilst the Basarwa and Bakgalagadi, each account for about 3% of the population (Beaugrande, 2000; Wagner, 2006; Hanemann, 2006; Pfothenhauer, 2009). The Basarwa are part of the Khoisan-speaking group whilst the Bakgalagadi are a Bantu-speaking people. The Bakgalagadi came into Botswana from South Africa just before the Tswana-speaking groups around 1600. The Basarwa had lived in Botswana for centuries before the arrival of the Bakgalagadi, the Tswana, and the Europeans (Hitchcock, 2002; Gjern, 2004; Pridmore, 2006; Modiba, 2008).

The Basarwa and Bakgalagadi have, cohabited and developed highly flexible land use strategies in order to cope with an uncertain environment. The Basarwa are historically considered the 'First People' of the Kalahari or the 'indigenous' people of Botswana and are generally recognised as such (Hitchcock, 1999; 2002, Saugestad, 2001; Valadian, 2002; Boko, 2002, Bourne, 2003; Campbell, 2004; Gjern, 2004; Begum and Baroque, 2005; Pridmore, 2006, Wagner, 2006; Modiba, 2008). It is problematic defining who is indigenous and who is not. Bourne (2003) quotes the International Labour Organization's Convention 169 of 1989, which defines indigenous as:

...tribal peoples in independent countries whose social, cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations.

Another definition of indigenous is one quoted by Begum and Al Faruque (2005) from the Special Rapporteur of the United Nations 1986 that states:

Indigenous communities, peoples, and nations are those, which, having a historical continuity with pre-invasion and pre-colonial societies that developed in their territories, consider themselves distinct from other sectors of the societies now prevailing in those territories, or parts

of them. They form, at present, non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems.

The above definition is more comprehensive and it is thus the preferred term. Begum and Al Faruque (2005) further point out that indigenous peoples the world over, are still being deprived of their land and access to life-sustaining resources and that some governments appear to be reluctant to formally recognise indigenous rights to land. Land has a deep cultural and spiritual meaning to indigenous people. For instance, in Botswana, the Basarwa believe their removal from their ancestral lands would make them extinct (Mogwe, 1992). The Basarwa argue that historically they are the original inhabitants of Botswana because they have lived undisturbed for years, together with the wildlife, long before the arrival of the Tswana-speaking groups and the Europeans. Furthermore, they contend that the land they had come to know as theirs was taken away from them by other Africans and Europeans (Mogwe, 1992). Historical evidence that includes rock paintings supports the view expressed by the Basarwa that they are the indigenous people of Botswana (Hermans, 1980; Good, 1993; Tlou and Campbell, 1996). However, the government of Botswana does not recognise that the Basarwa have a culture and way of life different from other ethnic groups in Botswana (Modiba, 2008). It rejects the notion that the Basarwa are indigenous and says all Batswana are indigenous (Hitchcock, 2002; Campbell, 2004; Modiba, 2008). This rejection appears to be based on the government's need to ensure unity. This meant the assimilation of the minority groups into the dominant and majority Tswana group (Boko, 2002; Wagner, 2006). The unintended consequence of this policy decision has given rise to problems unique and specific to the Basarwa, Bakgalagadi and other minority groups and to the fact that they have been neglected (Wagner, 2006).

Nevertheless, the Basarwa have distinct socio-cultural, religious, and economic activities that qualify them to be deemed indigenous (Suzman, 2001.) As a people, they meet the criteria that define indigenous people. The defining criteria for recognition of an indigenous people include occupying a position of non-dominance, being a numerical minority, having livelihoods based on the adaptation of resources and territories that differ from those of the majority. The criteria also include perceiving and being perceived by others as different from the majority and defining themselves as indigenous (Bourne, 2003; Campbell, 2004; Begum and Al Faruque, 2005).

In order to reach the unreached (marginalised and indigenous) groups in rural Africa in terms of affording them their opportunity to education as a basic human right open and distance learning methodologies are currently the most viable means to do so given the escalating costs of providing quality education in Africa using the conventional mode of delivery, the shortage of teachers, facilities and the need to attain the Millennium Development Goals (MDGs) and Education for All (EFA) targets.

2.3. Education as a basic right for the unreached communities

Education is a basic human right (Curtis, 2009). All people including those from the unreached communities should share this. However, in practice, the right to education is not enjoyed

equally by all. The unreached or marginalised groups in various regions of the world suffer disproportionately from unequal or restricted access to quality education and inappropriate education strategies (United Nations Human Rights Council, 2009). Observations by Bourne (2003), COL & COMSEC (2007), COMSEC (2009) is that education provision for marginalised communities in Africa and elsewhere does not adequately reach marginalised communities nor adequately address their needs and aspirations. In other words, adequate education provision has failed to reach nomadic populations and marginalised indigenous communities. In India, the enrolment rate for Scheduled Tribal children in 1997-8 was only 66% nationally, in Namibia - in the 1990s - the scholastic enrolment of the Basarwa was only 21% compared to a national average of 83%, in Australia in 1999, nearly half of all indigenous people aged 15 or over had had no formal education and only 5.5% were participating in years 11 and 12 at the top of the secondary school (Bourne, 2003).

The United Nations Economic and Social Council (1999) and Human Rights Council (2009) make it clear that education is an inalienable human right and is more than a commodity or a service. It is regarded as crucial for the realisation of other rights and an indispensable agency for the expansion of human capabilities and the enhancement of human dignity. Education is further regarded as critical as it plays a role in socialization for democratic citizenship and represents an essential support for community identity. It is also viewed as a means by which individuals and communities can lift themselves out of poverty and is also a means of helping minorities overcome the legacies of historical injustice or discrimination committed against them, (United Nations Human Rights Council, 2009). It is therefore critically important that people from marginalised communities should have the right to a fully-fledged education, given that the lack of or limited education impinges on civil and political rights, as well as the rights to freedom of movement and expression. Lack of education also limits participation in public affairs, e.g. voting rights and limits the access and enjoyment of rights to employment, health, housing and an adequate standard of living. Lack of education can also result in reticence to engage with law enforcement authorities inhibiting access to remedies when human rights are violated. Lack of or poor quality of education is a barrier, in particular, for marginalised people's progress and empowerment (United Nations Human Rights Council, 2009).

The United Nations Human Rights Council (2009) further advocates for education to serve the dual function of supporting the efforts of communities to self-development in economic, social and cultural terms while opening pathways by which they can function in the wider society and promote social harmony. This therefore calls for education strategies that enhance rights and freedoms. Human rights are violated when, for instance, unwanted assimilation is imposed through the medium of education or enforced social segregation is generated through educational processes. (United Nations Human Rights Council, 2009). In the light of the rights and obligations recognised at the level of the United Nations, the right to secondary education of people from marginalised communities satisfies Article 13 (2) (b) of the Economic, Social and Cultural Rights . The said Article recognises that secondary education demands flexible curricula and varied delivery systems to respond to the needs of learners in different social and cultural settings. The United Nations Economic and Social Committee encourages alternative educational programmes which parallel regular secondary school systems (United Nations Economic and Social Council, 1999). This is again echoed by the COL and COMSEC Report (2007) that calls for inclusive education, suggesting that deliberate and positive action should be made to ensure the realization of access for all kinds and conditions of learners including those from the Basarwa and Bakgalagadi communities in Botswana. The report further appeals to

educators to explore flexible and innovative approaches in education provisioning to address the needs of marginalised communities. Open and distance learning (ODL) is one flexible and innovative approach that is capable of reaching and addressing the needs and aspirations of marginalised communities.

2.4. Open and Distance Learning (ODL)

ODL has evolved in stages from the first generation to what it is today, the fifth generation. Over the years, ODL has been deployed in its various forms in Africa; however the deployment of the fifth generation in Africa presents a huge challenge. A number of factors determine the generation or level of ODL to be deployed in any particular context. Critical in the deployment of ODL is the political will and the socio-economic development in a country and this includes the information and communication technology (ICT) infrastructure, knowledge and skills in the application of ICTs. A strong and vibrant ICT infrastructure with a high capacity broad band that has a countrywide coverage, makes it possible to reach the unreached including those in geographically remote contexts. There is a wide range of ICT media that can be used even in the hard to reach rural areas, provided the providers of ODL have the initiative and financial resources and capacity to procure and deploy the available media and technology to enhance ODL programme development and delivery. The current initiatives in the deployment of ICT in Africa reveals good political will on the part of governments and the private sector, however critical resources which could be used in ODL, are being diverted to address poverty and health issues in particular the HIV and AIDS pandemic. Due to a host of challenges, progress in using ICTs in ODL in rural and geographically remote areas is very slow and only a few cases of communities who are hard to reach are being reached through the traditional media, print and radio.

ODL is a blanket term used for learning systems that offer varying mixes of openness and distance (DFID, 2008). Its key features include: separation of teacher and learner in time or place or in both time and place; use of mixed-media courseware that is print, radio and television broadcasts, video and audio cassettes, computer-based learning and telecommunications (Valentine, 2002; COL, 2000; DFID, 2008). ODL also includes a two way communication which allows learners and tutors to interact and the possibility of face-to-face meetings for tutorials. The language and terms used to describe ODL activities makes it difficult to have one definition (COL, 2000). The commonly used terms related to open and distance learning include correspondence education, distance learning, open learning, technology-based education and flexible learning amongst others.

The deployment of distance education in Africa dates back to colonial times. When distance education was first introduced that is *first generation*, it was known as Correspondence Education. Correspondence was print-based with communication through postal services. Learners pursuing correspondence education did not have to leave their homes to study. Correspondence education heavily depended on printed materials which were not interactive and there was no contact with the teacher. The teacher evaluated the assignments and posted them back to learners. Correspondence education only relied on the use of the postal service to reach learners. This initial form of distance education constitutes the first generation of ODL. In

southern Africa, the pioneers of correspondence education include the University of South Africa, London External College, Rapid Results College and the African Correspondence College. Given the poor quality of education that was offered to Africans by the colonial government, correspondence education from secondary education level right up to university level became popular for those who could afford it, for example in South Africa and Zimbabwe. It was also used for up-grading teachers, for example in Botswana in the 1960s. The *second generation* of distance education replaced correspondence during the post colonial times in the 1980s. This involved the use of print, audiotape, videotape, computer-based learning and interactive video. However the second generation of distance education like the first generation occurs when a learner learns at a distance from a teacher using pre-recorded, packaged learning materials. The learner is still separated from the teacher in time and space but is being guided by the teacher, (Rowntree, 1992; COL, 2000).

The *third generation* of distance education emerged in some African countries after the 1990s and involves the use of audio-teleconferencing, video-conferencing, audio graphic communication, broadcast television and radio, but still the use of printed study material remains the most dominant technology in all African countries. The *fourth generation* of distance education is anchored on the use of varied open and distance learning methodologies which include interactive multimedia online, internet-based access to WWW resources and computer mediated communication. However, this type of distance education is still finding its way with only a few universities in North Africa and South Africa being able to facilitate its deployment. The *fifth generation* type of distance education involves the utilisation of interactive multimedia online, internet based access to WWW resources, computer mediated communication using automated response systems and campus portal access to institutional processes and resources, and very few universities in Africa are aiming towards developing to that level for example, the University of Pretoria in South Africa and others in North Africa.

The increased recognition and use of open and distance learning methodologies has spread across most African countries due to the need to expand access to education at all levels. The desire to attain Education for All targets resulted in the massification of primary school level education and this has put pressure on the need for secondary education and in turn this has contributed to the high demand for tertiary level education. African governments therefore have promoted the development and deployment of distance education in order to address the ever rising demanding for education at all levels in their countries. Open and distance learning methodologies have therefore been adopted by African governments in order to expand access to education.

The term open and distance learning (ODL) in the education field, has gained prominence in the past 20 years (COL, 2000). Open learning is a system in which the restrictions placed on learners are under constant review and removed wherever possible. As a system, it entails policies that permit entry to learning with no or minimum barriers with respect to age, gender, or time constraints and with recognition of prior learning (COL, 2000). Open learning enables learners to learn at the time, place and pace which satisfy their circumstances and requirements. Open learning emphasises the opening up of opportunities by overcoming barriers that result from age, gender, geographical isolation, previous experience requirements, personal or work commitments or conventional course structures which have often prevented people from gaining access to training or schooling (Rowntree, 1992). In other words it provides learners with choices about e.g. the medium of knowledge transmission (print, on-line, television or video) or

the choice of place to study (at home, workplace or on campus). It also allows learners to have a choice to pace their study and choose when to complete their courses. It allows for support by tutors, audio conferences or computer-assisted learning and also for entry and exit from the course when the learner so desires. The type of open and distance learning that is technology-based refers to systems of teaching and learning in which a technology other than print plays a major role (COL, 2000). The increased utilisation of computer and internet technology occurred after 2000 and it brought about phenomenal developments in the deployment of ODL. The ODL landscape has indeed over the years changed in Africa. However, the changes have rather been restricted to urban areas where internet connectivity is available and reliable.

Providing education to rural and marginalised populations which include nomadic communities is one of the most challenging and urgent issues facing education policy makers, practitioners and other role players within the field (COMSEC, 2006). The use of open and distance learning (ODL) methods to address the challenges in many countries including Botswana, Kenya, Malawi, Mozambique, Nigeria, Senegal, South Africa and Zimbabwe is now common. ODL in its various forms has proved to be capable of reaching large numbers of people in developing countries (Hulsmann, 2004, Siaciwena & Lubinda, 2008).

Despite the different forms of ODL, the delivery of its programmes occurs along two continua, that is, the continuum of time and the continuum of space, (COL, 2000) as illustrated in **Table 1**.

Table 1 ODL scenario

	Same time (synchronous)	Different time (asynchronous)
Same place	Classroom teaching, face-to-face tutorial and seminars, workshops and residential schools	Learning resource centres, which learners visit at their leisure
Different place	Audio conferences and video conferences; television with one way video, two way audio, radio with listener-response capability; and telephone tutorials	Home study, computer conferencing, tutorial support by e-mail and fax communication

Source: COL (2000)

The continuum of time and the continuum of space make it possible to deploy ODL which is enhanced through the utilisation of ICTs even in geographically remote rural areas and other hard to reach areas, provided effort is made by the providers. ODL providers as in the case of Botswana have been successful to reach at the hard to reach communities because of the

government's political will and funding through annual subventions and safety nets provided to the less privileged through other departments notably the Remote Area Development Programme, Social and Community Development and Prisons Services Rehabilitation Department of Non-Formal Education. In other countries like Kenya and Nigeria, National Commissions for Nomadic Education have been established to address the challenges and these have adopted various approaches including distance education to provide education to nomadic communities and ICT methodologies such as radio have proved effective in delivery education in some of the communities. Critical in establishing an enabling environment has been the development of National ICT Policies and ensuring that these are taken on board in national development plans as cross-cutting issues. The National ICT policies are meant to guide the deployment and utilisation of ICTs in all sectors including distance education. The ICT policies are also meant to close or narrow the digital divide that obtains between rural and urban areas. If the digital divide is narrowed, it becomes feasible to provide equitable socio-economic and political development across country.

2.5. Deployment and utilisation of ICT in ODL in African Rural Areas

There is very little evidence in the available literature on ODL deployment in sub-Saharan Africa that demonstrates effective deployment and utilisation of ICTs in ODL. In most African countries the only ICTs that have been deployed to provide access to education to the unreached is the radio. The radio has over the years been used to provide access to education, particularly in improving literacy, health and agriculture. The absence of trends showing systematic uptake of ICTs in ODL is prevalent in all countries. Efforts that are being made in utilising ICTs are not deliberately meant for the unreached but for those who are already enjoying access to education, but still the challenges of internet connectivity, low bandwidth and inadequate ICT infrastructure have resulted in very limited gains especially in utilisation of ICTs in ODL for basic and secondary education. Institutions that provide basic education through distance education for instance in Botswana, South Africa, Lesotho Namibia and Zimbabwe do not have the capacity or the ICT infrastructure to facilitate such delivery. The unreached therefore largely remain unreached when it comes to using the latest ICTs, that is television, internet, email, video conference, moodle platforms etc. In Kenya, Uganda, Nigeria and Tanzania, where nomadic pastoralists and fishermen are the main groups that are unreached through the conventional means, the only form of ICT that has stood the test of time is the radio and it is currently being used effectively.

Most African countries have developed or are in the process of developing ICT National Policies and have clear ICT visions and plans. However, most of these countries have no dedicated National ODL Policies. It is critical for each country have inclusive education policies which also target the unreached and also to have ODL policies that speak to ICT policies. When such policies exist it becomes possible for the adoption and effective utilisation of ICTs in ODL delivery and to reach the unreached.

The deployment of ODL in African countries has seen providers to a limited extent reaching learners in rural areas through the use of various ICTs mainly radio, television, email, internet and mobile phones. Radio like in any other country has tended to reach larger numbers of learners but recent developments have shown that mobile technology through cellular phones

has had the capability of reaching many more rural learners. Mobile phones are widely used because they are more affordable than landlines, radios are easy to carry around hence many people in rural areas own them. Mobile phones usage is mainly in areas of learner support whereby ODL providers are able to disseminate for instance pertinent information to learners for example; registration dates, reminders on assignment due, notification of examination dates and results. Botswana like South Africa and other African countries has made attempts in deploying ODL that attempts at reaching the unreached with little utilisation of ICTs due to lack of ICT infrastructure and other challenges related to poor or inadequate ICT skills on the part of the facilitators and learners.

Botswana is used here to highlight the deployment of ODL in which a decentralised learner support system has been adopted to make attempts at reaching the unreached. This example also serves to showcase progress, challenges and prospects of ODL despite very limited utilisation of ICTs in ODL. Efforts and challenges are similar to other African countries that have embarked on similar initiatives hence the choice of Botswana as an example suffices currently.

2.6. Botswana as a case study for reaching the unreached

Botswana endeavours to establish a robust ICT infrastructure which can support among other things the advancement of education including open and distance learning aiming at reaching all within Botswana. Efforts towards utilisation of ICTs in open and distance learning are anchored on the Botswana ICT policy and the 1994 Revised National Policy of Education (RNPE) which spells out how Botswana should go about expanding access to Education through the distance education mode. A Draft National ODL Policy was just completed with the support of the Commonwealth of Learning through the Southern African Development Centre for Distance Education (SADC-CDE) and is yet to be considered for adoption and implementation by the relevant authorities. The basis for utilisation of ICTs in ODL in Botswana is therefore within the legal framework that guides the educational developments and practice. As a result of the RNPE, a dedicated open and distance learning institution, the Botswana College of Distance and Open Learning was set up and for more than a decade it has been the lead ODL agency in Botswana and has developed policies and strategies for reaching out at the unreached in rural areas.

The use of ICTs in ODL by BOCODOL include weekly radio programmes using the National Broadcasting Corporation, radio cassette players, audio cassettes, video cassettes and CDs. Generally, supporting learners using mobile phones and internet is limited due to unavailability of ICT infrastructure countrywide. There is generally poor or unavailability of mobile phone signals in most remote settlements and this makes it not possible for all learners to be supported using some of the ICTs which are currently available in urban settings.

In order to reach out at the unreached, BOCODOL developed and implemented a remote learner strategy. The strategy is being implemented within the framework of a decentralised learner support system anchored on the use of five strategically located regional centres. Each regional centre is provided with 4x4 vehicles. The vehicles are used throughout the semi-desert and desert conditions that cover 80% of the countryside. In each regional centre, satellite learning centres have been established for learners who are not easily accessible. Each satellite learning

centres has been provided with radios, cassette players and batteries since most remote rural settlements have no electricity.

2.7. The nature of learner support at Botswana College of Distance and Open Learning (BOCODOL)

There are limited spaces in the 29 senior secondary schools that currently exist in Botswana and the formal education system is not flexible enough to meet the needs and expectations of the unreached, mostly the Basarwa. Flexible modes of delivering education in Africa include open and distance learning and mobile schools for nomadic pastoralists in Djibouti, Eritrea, Ethiopia, Kenya, Tanzania and Uganda (Carr-Hill and Peart, 2005). In the case of Botswana, open and distance learning is the mode that has been deployed to address the challenges of accessing education. The success of open and distance learning depends on the effectiveness of learner support provided to learners. The Botswana College of Distance and Open Learning is currently the only provider of secondary education through the distance mode and has a decentralised learner support in place.

The BOCODOL's conception of open and distance learning is premised on promotion of open access to its programmes and flexibility in learning and programme completion (BOCODOL Learner support policy, 2001). What this implies is that there are no restrictions in terms of gender, age or location. All prospective learners who have completed a junior certificate level course or have equivalent prior learning can enroll for the Botswana General Certificate of Secondary Education (BGCSE). The BGCSE is a two year programme, however, because of BOCODOL's open access policy, learners are allowed to complete the programme within four years. They are also free to choose six subjects from the eleven that are currently available and to write examinations whenever they are ready. BOCODOL provides learning support sessions through community study centres (CSCs) and learning satellite centres (LSCs) but attendance is not compulsory.

In order to understand the nature of learning support provided by the Botswana College of Distance and Open Learning, historical evidence from various college reports and documents like the 1994 Revised National Policy on Education (RNPE), Botswana's Vision 2016 document, and the BOCODOL Act No. 20 of 1998 have been used. The development of distance education with a deliberate move towards the provision of a decentralised learning support system in Botswana is recent. The 1994 Revised National Policy of Education (RNPE) recommended the establishment of BOCODOL. The BOCODOL Act No. 20 of 1998 established the College.

The RNPE was a product of countrywide consultation with the citizens of Botswana made by a Presidential Commission in 1993. During the consultations, the public called upon the government to improve access to basic education through distance education. The Presidential Commission recommended the establishment of BOCODOL as a response to the views expressed during the countrywide consultation. The BOCODOL Act No. 20 of 1998 stipulates that the College Board shall authorize the creation of regional centres in appropriate locations to provide support services to learners and provide the means to establish positive relations between local communities and the College. It also states that a regional centre shall be run by a

regional manager whose duty it is to oversee the establishment, resourcing, support, monitoring and co-ordination of community study centres or other learner support centres. Other duties of the regional manager indicated in the Act are the recruitment and training of part-time staff, establishing mobile centres where feasible and supervising the rendering of support to learners in remote areas where such a need is identified. The Act further outlines examples of learner support services that a regional centre should give, namely, amongst others, marking learner assignments, providing face to face tutorials, providing counselling support to learners, handling examination matters and carrying out any other activity that the College may from time to time determine (Botswana Government, 1998).

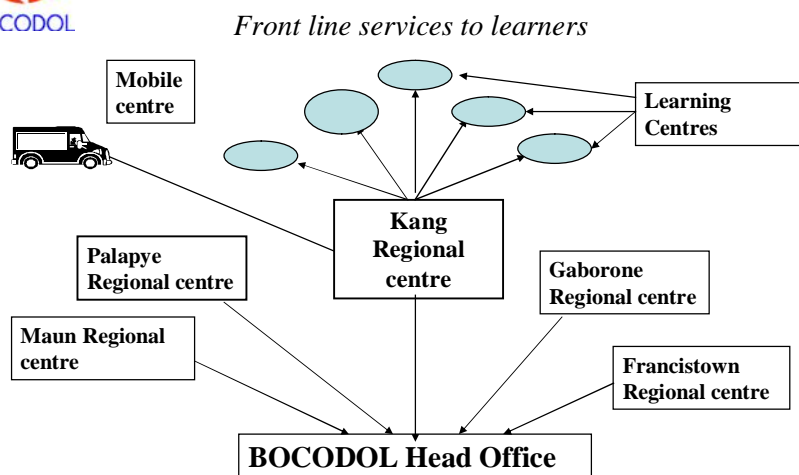
Two pilot regional centres were initially established in 2001, one at Gaborone (the capital, an urban centre) and the other at Kang (a very rural area). The pilot ran for a year and by January 2002, five regional centres across the country at strategic locations had been established, namely Gaborone, Francistown, Kang, Maun and Palapye (BOCODOL Annual Report, 2002/3). Four of the regional centres are located in urban centres whilst Kang is in the heart of the Kalahari Desert. This latter centre serves the population in the western part of Botswana. The establishment of the five regional centres was preceded by a number of consultancies that included a Learner Support Consultancy that focused on learner needs and profile. The Learner Support Consultancy designed a decentralised learner support system. This is the preferred system and is currently operational throughout the country. It uses the five strategically located regional centres to reach out to youths and adults who would otherwise not have access to secondary education. Figure 2 shows the decentralized learner support system. It is premised on the open learning philosophy and on a learner-centred approach (BOCODOL Tutor Guide, 2002).

The development of a decentralised learner support system was also guided by a BOCODOL Learner Charter. The charter articulates what BOCODOL, through its Learner Support Division, commits to doing in terms of supporting distance learners. The needs of the youths and adults also dictated the kind of learner support system that the College was to develop.

Figure 2 Decentralised learner support system



Learner Support System



Source BOCODOL, 2001

A decentralised learner support system meant that communities would be involved in the college initiatives and collaborate in providing resources necessary for supporting distance learners even in very rural remote areas. The decentralised learner support model was piloted in two places, Gaborone and Kang in 2001 before the other regional centres were established, (BOCODOL Annual Report, 2002/3).

In 2003 the College (Lelliott, 2002; BOCODOL Annual Report, 2002/3) commissioned a consultancy specifically focusing on how to support remote learners. The consultancy recommended a remote learner strategy. The remote learner strategy led to the establishment of learning satellite centres across the country at some primary schools in villages, which have no secondary schools. Once the decentralised learner support model and the remote learner strategy were adopted by the College in 2001 and 2003 respectively, the task of implementing the model and the remote learner strategy commenced.

The learner support division at BOCODOL, headed by a Director, is responsible for implementing the decentralised support system. The learner support division consists of five regional centres, each headed by a regional manager, with at least ten supporting staff members. Each regional centre establishes community study centres (CSCs) and learning satellite centres (LSCs). CSCs are established at secondary schools whenever fifty or more learners have been enrolled. A memorandum of understanding is signed between the host secondary school and BOCODOL on the shared use of facilities and other resources. Each CSC is run by a part-time supervisor. Face-to-face tutoring at a CSC is carried out by part-time tutors who are subject specialists recruited by the regional centre (Tau & Gatsha, 2009).

The activities that are carried out at a CSC include pre-enrolment and enrolment of learners, tutorial sessions, marking of assignments and group and individual study sessions (BOCODOL Tutor Guide, 2002, Tau & Gatsha 2009). In each CSC, there is a Learner Management Committee (LMC). Learner leaders from the LMCs are expected to help the CSC supervisor and tutors in running the community study centre and taking care of the facilities. A code of conduct for learners at each centre is made available. Figure 3 shows the activities carried out at the CSC.

Figure 3 Community study centre's activities

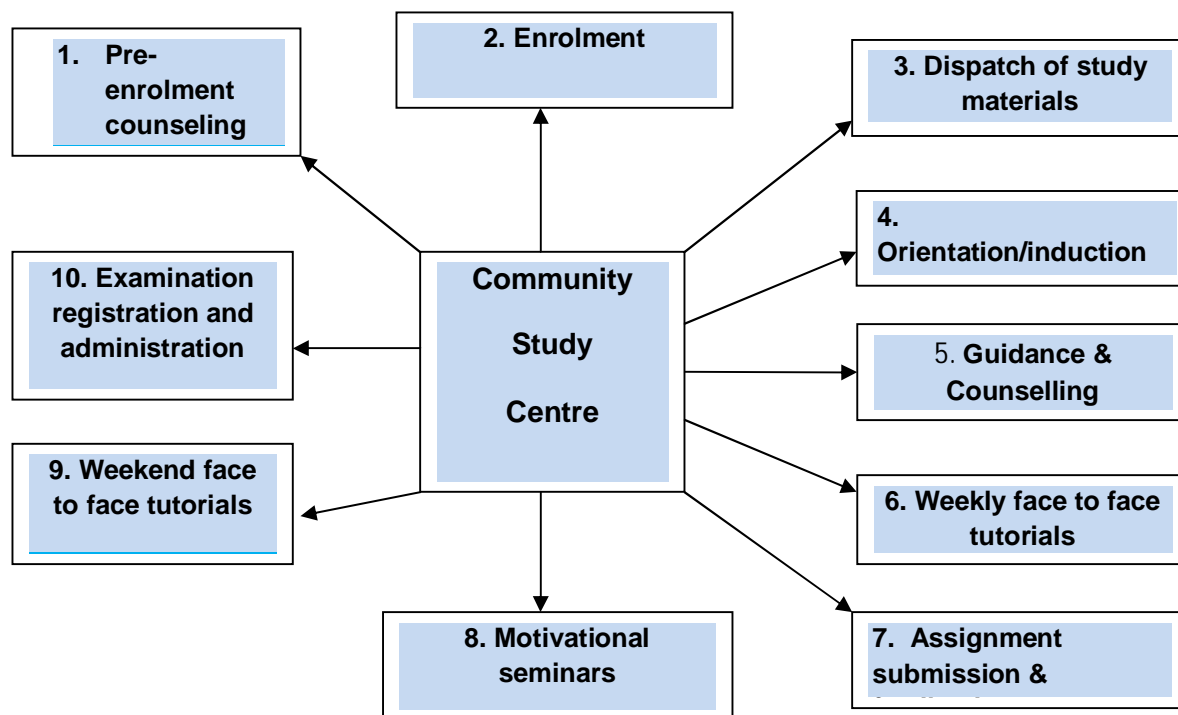
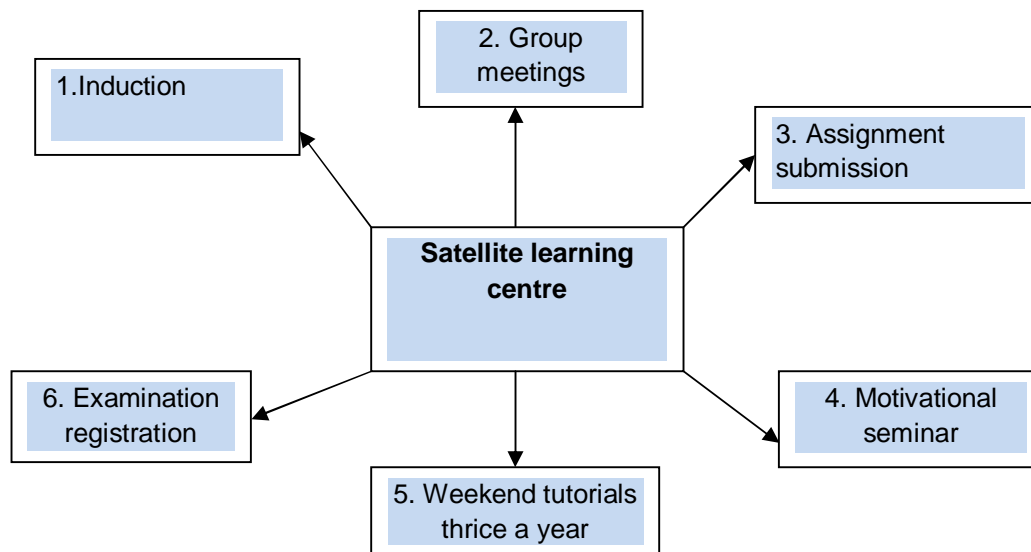


Figure 4 shows the activities that take place at a learning satellite centre (BOCODOL Tutor Guide, 2002).

Figure 4 Satellite learning centre's activities



Learning satellite centres are also established at primary schools in settlements or villages that have no secondary schools. Learning satellite centres in the Kang region where this study was conducted specifically service distance learners from marginalised communities in very remote settlements. In order to have a viable learning satellite centre BOCODOL expects at least 10 learners to have been enrolled. In a learning satellite centre, a memorandum of understanding is signed between the host primary school or community agency and BOCODOL on the shared use of facilities and other resources. A learning satellite centre is run by a part-time co-ordinator. The part-time co-ordinators are responsible for organising and supervising learners at the satellite centres. They also advise learners on group formation and discussion techniques, maintain learner records, receive assignments and pass them to the Remote Learner Advisor (RLA) who is a College official. The co-ordinators also receive assignments from the RLA and pass them on to learners (Tau & Gatsha, 2009).

The activities carried out at the learning satellite centres focus mainly on learning support but do also address issues of personal support.

2.8. The challenges faced in the deployment of ICT to enhance ODL in African Rural Areas

The inadequate ICT infrastructure across rural Africa and the unavailability of dedicated national ODL policies negatively affect teaching and learning using the ODL mode. Poor rural communities in Africa do not have the necessary awareness, skills or facilities to enable themselves to develop using ICTs (Gray & Sanzogni, 2004). Inadequate ICT infrastructures in rural areas remain a major source for the digital divide in Africa and for under-performance of

learners. People living in rural areas are still largely disconnected despite efforts being made to provide internet connectivity in some remote rural areas. The challenge is that many internet networks in rural areas are unable to deliver basic quality service needed for simple applications due to high internet traffic demands (Johnson, Pejovic, Belding & van Stam, 2011). The challenges of internet connectivity in most rural Africa continue to hinder access. The other challenges that hinder effective usage of ICTs in the deployment of ODL in rural Africa include the relevance of content on the internet where internet is available, inadequate capacity of ODL providers and generally inadequate ICT skills on the part of ODL teachers and distance learners in rural areas

2.9. The potential of ODL in rural areas through the use of ICTs

ICTs in ODL are perhaps the greatest tool to date for self-education and value addition to any community's development efforts in order to ensure that issues of educational equity and social exclusion rural communities are addressed. Attempts at using ICTs in ODL and initiatives at developing dedicated national ODL policies have begun in some African countries. These efforts have the potential to ensure equity in the provision of education to rural communities through ODL. There are also interesting developments in some African countries with regard to open educational resources and in the use of mobile cellular-phones in supporting distance learners

3. Tools and Strategies for supporting Distant Learners

Shireen PANCHOO

3.1. ODL and ICT

The use of Information and Communication Technology (ICT) in the field of Open and Distance Learning⁴ (ODL) is still not being used effectively with regards to supporting learners⁵ in their learning process. The high rate of learners abandoning their studies is alarming (Panchoo, Audet, 2008, Dorais, 2003 ; Bernard *et al.*, 2000; Bourdages, 1996, Bajtelsmit, 1988 ; Bean, 1982; Fleming, 1982) and this call should not be ignored as ICT is still not being used effectively to reach the learners as expected. In this context, this study investigates on the specific problems and challenges that online distant learners face in order to propose efficient uses of ICT as a supporting tool to facilitate learning in distance mode. Bearing in mind the capabilities of ICT, and the learners' ability to use technology, the aim of this paper is to propose ICT both as a technical and pedagogical tool in order to encourage learners succeed in their studies.

Worldwide, education has proved to be one of the basic pillars with regards to the development of human societies. Education is an essential input to the personal, intrinsic human development, on which a country's economic and social advancements highly depends. In spite of this fact, in reality, inequalities of admission to education still exist (Smith & Casserly, 2006) mainly in poor countries (Tamasevski, 2006). Education in Africa "remains highly rationed; access to education is restricted to the rich" (Gatune and Najam, 2011). Non educated nations do not privilege productive labor capacity, well being and adequate standard of living. They are more prone to risks. According to an UNICEF report, in some countries in sub-Saharan Africa, "the danger of infection is highest among the poorest and least powerful; particularly children who live among violence suffer sexual exploitation or have been orphaned by HIV/AIDS"⁶.

ODL is flexible with regards to giving education to anyone at any place and it is accessible to learners even in the rural areas of Africa. Due to lack of technical and human resources, distance education is not supportive enough in reaching effectively the children in the rural school

⁴ The terms Distance Education (DE) and Open and Distance Learning (ODL) are used to denote that learners and tutors are not physically in one place. DE is used in a more general context than ODL.

⁵ Student and learner are used to denote the ones who are in the process of studying. Student is used in this paper as a general term or the one who is in classroom whereas, learner is used to denote the one who is enrolled in distance education courses.

⁶ http://www.unicef.org/mdg/index_genderequality.htm, downloaded on July 6, 2011.

(Ankrah-Dove, 1992; Dove, 1985). Africa is among the developing countries which needs prompt intervention to encourage learners to strive and succeed in their studies and, eventually rectify the digital divide which has taken place across time. In Nigeria for example, there are over two million applicants for higher education, but only 100,000 positions” (Gatune and Najam, 2011). Contrary to face-to-face classroom interactions, ODL is more convenient, accessible and cheaper. This paper aims at extending effectively the use of ODL through ICT with regards to giving flexible access to quality information, devising better learning strategies and encouraging interactions among the different stakeholders so that the problems faced by distance learners are attended to and the unreached are given better opportunities and supports to study and complete their studies.

Distant learners around the globe face problems which are inherent due to the absence of tutors’ and learners’ proximity, leading them to problems such as studying in isolation, de-motivation and uncertainties due to a lack of interactions, resulting to a high rate of learners’ abandoning their studies very early (Nault et Marceau, 2007, Educacentre, 2005, Biesenbach-Lucas, 2004 ; DeTure, 2004 ; Molinari, 2004, Kanuka, 2002, Bernard *et al.*, 2000). To better understand the learners’ needs and problems in their studies, the different supporting tools such as telephone, radio, television and the technologies are researched. The tools used in the older generations of Distance Education lack the capabilities of interacting with the learners in order to understand their problems and learning needs. Therefore, the tools used were not fully supportive in the learning process. Hiltz (1998) rightly claimed that the use of the tools alone will not be beneficial. It is therefore imperative to research also on the pedagogical supports that learners require. In this respect, part of the result of this paper is taken from a doctoral thesis (Panchoo, 2010) which had the aims of researching the types of supports the learners look for during their tutor-learners and learner-learners synchronous interactions for a master’s online course.

A virtual set up is proposed with a variety of tools in order to give a proper environment to all learners who would feel a sense of belonging. For example, with the *presence* functionality, the learners would be encouraged to interact with their peers easily for mutual support. A pedagogical framework is conceived after taking into consideration the present context and the challenges faced by the distant learners. Strategies are also outlined in order to enable reaching the unreached. We are of opinion that, to support effectively distant learners, it is necessary to provide a learning environment, to come up with relevant learning strategies which will encourage learners to interact freely with learning objects, tutor and colleagues. It is important to give them the opportunities to support each other in a socio-constructivist context during their learning process.

3.2. The education process

Learning is complex: it is in the brain, the black box, that the processing is done. The learning transformation is still not transparent. Researches on teaching and learning methodologies, cognitive science, content development and human minds are still subjects of research by educational scientists (Réboul, 1999, Giordan, 1998, Ayersman and Minden, 1995, Meirieu, 1994). Classroom is the preferred mode of learning - stakeholders join together to focus, support and facilitate learning. This is where the teacher-students interactions take place whereby the teacher, who is considered to be the knowledge expert, has the responsibility of ensuring that the relevant knowledge are transferred to, conveyed and understood by students. However, they have got varying learning capabilities and styles, and the education process is not able to reach all learners all together equitably. With this favored educational system, the learners, who are unable to fit in the system, fail.

This educational system needs to mobilize a range of resources relating to the physical infrastructure, administrative planning and skilled tutors. African countries however did not have adequate resources. With the adoption of ODL, learners were given access to education but without the preferred learning supports. And it is not surprising to note that the success rate of Distance Education learners is low. “Research claims that effective distance education depends on the provision of pedagogical excellence” (Bernard *et al.*, 2004). The pedagogical concern consists of understanding the learners’ needs, helping, guiding, accompanying, supervising, and controlling them till they reach their destination.

If it is taking time for technologies to integrate the classroom, it should not be the case with ODL because the latter is flexible and it spans across space and time, with no limited location and time constraints as imposed by the classroom. Technology is already being used by ODL but unfortunately, it is used “primarily for support of logistic processes” (Collis and Moonen, 2008) rather than for pedagogical change. It requires just a step forward by including the pedagogical aspect, for the benefits of all learners. Technology is a tool which has to integrate the classroom as well, in order to bring more flexibility and enhance learning. It is worth noting that, with the validity of the mentioned modes of education, there is “no significant difference” (Abrami *et al.*, 2006) between face-to-face learning and distance education.

This chapter gives an overview of the various tools that were used across the generations of distance education. The focus is to analyze their characteristics with the aim understanding to what extent they have been able to reach the distant learners as support in their learning. We also stress on the integration of the use of ICT in ODL and the challenges faced by distant learners.

3.3. The valued learning process in classroom

The face-to-face mode of education consists of a set of defined, proven steps and activities, namely, the teacher's interactions, feedbacks and evaluations. The environment in which learning takes place generates security and it is a common ground for learners to evolve together towards meeting their aims. Above all, the face-to-face meetings between the teacher and the students are known to be very valuable.

If the developed countries are researching on improving the face-to-face pedagogy, such is not the case in Africa. The situation in Africa is such that the privileged face-to-face classroom interaction is not within the reach of many. Even though this mode of learning is known to be advantageous, it requires high capital investments which are not always easily available. The impact is severely felt today. Due to the lack of education, Africans and the poor across the world are left more and more behind as time goes by, till they are left behind and they are qualified as *unreached*. It is a fact that conventional face-to-face education is not accessible and convenient to all thus it does not give an equitable chance to all.

The technological tools today can simulate the classroom interactions. Synchronous and asynchronous communications can help online learners enjoy the facilities derived by the classroom environment. The main activities are the course content delivery, face-to-face interactions, learning activities and evaluations (Panchoo, 2010). The responsibility of disseminating the content relies on the teacher. However, there are researchers (Cousinet, 1959, Not, 1991, Giordan, 1998, Réboul, 1999) who qualified the students as passive consumption of information due to the lack of interactions that take place in face-to-face sessions.

It is imperative to look for enhanced pedagogies to improve the existing learning processes and give more opportunities for learners to be reached.

3.4. Distance Education as an alternative mode

Distance education has acquired many terminations and definitions across time. Open and Distance Learning (ODL), tele-learning, networked learning, web-based training or e-learning are common terms used to express that this mode of education does not take place in a common physical location. According to Keegan (1996), the definitions converge to five characteristics:

- The quasi-permanent separation of tutor and learner
- The influence of an educational organization
- The use of technical media
- The provision of two-way communication
- The quasi-permanent absence of learning groups.

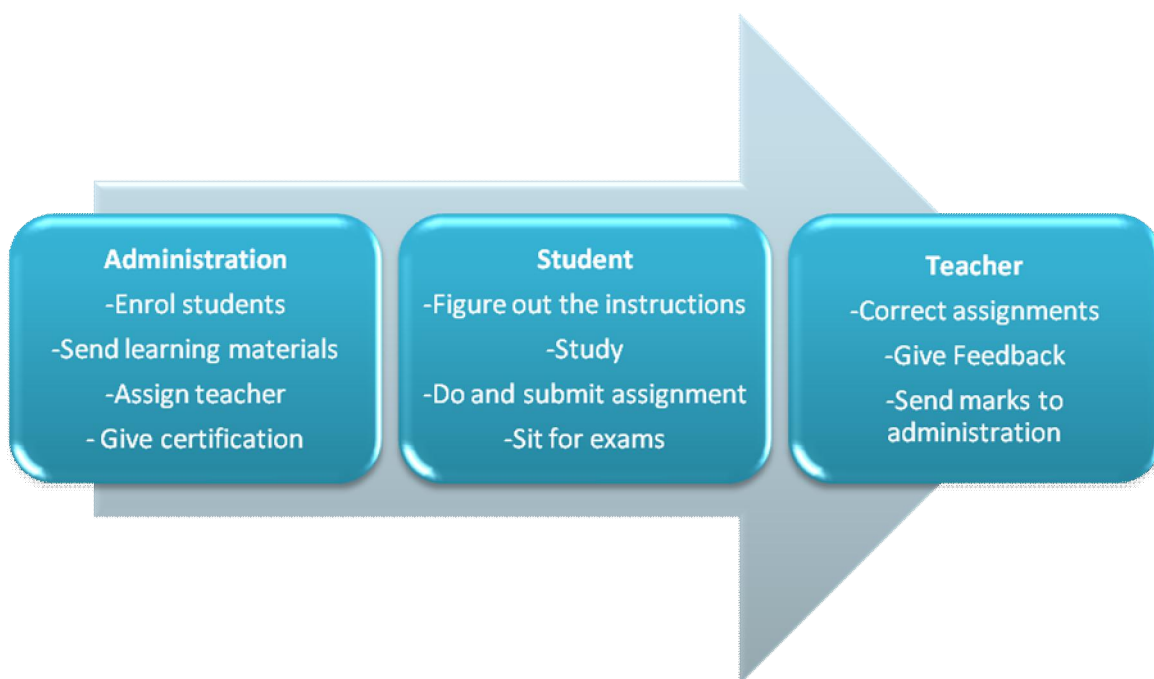
It defines the separation of the tutor and the learners who are not physically at one location.

According to Dodd (1991) “Distance education is a greater equalizer of educational opportunity and provides large numbers with the chance to continue their education. Due to the lack of resources, distance education has been considered since 1840 (Dieuzeide, 1985, Charlier and Peraya, 2003, Vivian Gilkman, 2002 and Keegan, 1996) as an alternative mode of education. It is considered to be an accessible and suitable solution, with no heavy infrastructural investments. It has been an alternative option to education in London with the arrival of the stamp in the post office.

Distance Education has existed in Africa since 1873 with the creation of the University of Cape of Good Hope in South Africa, now called UNISA (Murphy *et al.*, 2002:30). The situation in Africa is such that the privileged face-to-face classroom interactions are not within the reach of many. This is one of the reasons why distance education in Africa is growing fast. With the rapid growth of ODL centers, the Quality Assurance and Accreditation Agency (QAAA) was put in place to “assess the performance of tertiary institutions including teaching, learning, research and service” (Hayward, 2006) in order to monitor and control the ODL institutions for the interest of “the public from fraudulent or substandard tertiary education providers”.

This mode of education has the main aim of giving educational access to learners, by sending course materials and assignments to the learners. Research shows that, indeed, institutions give administrative support (Peraya, 2001) and ignoring the pedagogical supports.

Figure 5: Responsibilities of DE stakeholders.



As shown in Figure 5, the learning responsibility is more on the learners. The tutor plays the role of the assessor or the moderator. The interactions of tutor-learners were inexistent or not on-time with the first generations of distance education as they communicated through the post office. Learning was not made easy. The learners have to struggle alone, with their piles of books, resources and assignments.

Across time, distance education looked for means of interacting with the learners and it has made use of available tools, such as telephone, radio, television, and the Internet as learning supports for the learners.

3.5. Telephone

To help learners in their process, at the end of 1980, the telephone and fax were used as a communication tool to bridge the distance between the tutor and the learners (Nissen, 2005). In France, at the *Centre regional Languedoc-Roussillon, CNAM*, at Montpellier, distant learners were able to listen to their tutor's face-to-face intervention via the telephone. However, this solution was costly and technically not reliable. Fixed telephone was still a luxury and not accessible for many in Africa. Therefore it did not serve the purpose for long. It is very difficult to support the increasing number of learners through this medium. Today the telephone is used to solve specific and problems which can be worked out rapidly. It does not encourage debates or discussions of ideas.

3.6. Radio

Information on radio can be broadcasted simultaneously to a wide range of people easily. This tool has brought hopes to the distant learners. A wide range of educational programs was transmitted in France, Germany and other developed countries. Radio is still used in Mauritius by the Mauritius College of the Air to diffuse educational programs. However, this media could have been used more effectively in distant education programs if the learners were given the opportunity to participate; communication is still one way. The learners can call the radio station or send questions through email. Other learners will then learn through the question and answers sessions. The listeners may not be satisfied if their specific queries are not attended to. Radio can be considered as a complementary tool in distance education programs. As shown in Table 2, radio was a commonly used media (Murphy *et al.*, 2002).

Malawi, Zambia and Zimbabwe established special study or distance education centers for primary school leavers who, supported by facilitators, attend daily to listen to radio programs and study self-instructional printed materials (Murphy *et al.*, 2002).

Table 2: Media support used in Africa in distance education.

Distance education for secondary equivalence			
Country	Subjects offered	Enrollment (1999–2000)	Technology used
Botswana	All subjects	600 Junior Secondary	Print, radio
Burkina Faso	French, math, physics	n/a	Radio, TV
Ethiopia	8 subjects	8,400	Print, radio, TV
Ghana	English, math, science	n/a	Print, radio, TV
Guinea	French, math, science	300 secondary teachers	Print, radio, audio tapes
Malawi	n/a	80,000	Print, audio tapes
Namibia	All subjects	18,325	Print, radio, audio tapes
Nigeria	All subjects	n/a	Print
Zambia	n/a	11,138 (1990)	Print, radio
Zimbabwe	Academic subjects	25,000	Print

Source: HDNED, The World Bank, 1999.

3.7. Television

Like the radio, television is a mediating tool (refer to table 1) which facilitates communication with the public. Africa is still making use of this media to reach the distant learners. This tool has the advantage of projecting not only the sound but it has also the capacity of captivating the attention of the learners with its multimedia capabilities. It is not only the individual's eyes which are involved but the individual's other perceptive organs as well (Lazar, 1988:19). The British Open University is mostly cited for its educational television programs which are diffused on BBC since 1971. In the African continent, television is used to communicate and educate the citizen in formal and informal courses. However, this tool is not able to reach the whole public with the different cognitive levels of individuals, especially when individuals have specific queries with regards to their courses. It also lacks the interactive approach and proximity in between tutor-learner relationship. Learning lessons on Television is not an easy, straight forward task as the tutor lectures one concept to the other by taking for granted that learning is taking place without any feedback from the learners (Panchoo, 2010). He is thus unable to suit the requirements of all distant learners. Well planned interactive television lessons can be a complementary and valuable tool in the distant education programs.

3.8. Technologies and the Internet

In the 60s, computers, known as an extraordinary invention, were used to process large amount of data and they were used mainly in big companies. They were complex to operate, expensive and big in size and they were used in the field of education in 1970 (Gilkman, 2002 :31). Today Information and Communication Technologies (ICT) along with the Internet are becoming indispensable tools in the field of education as well. With the communication tools mentioned earlier, rapid, personalized interactions were not possible and they hinder in giving the right supports to distant learners. ICT, on the other hand, has the capabilities of communicating both synchronously and asynchronously around the world with no geographical barriers. According to Saint (2000), “distance learning (DE) techniques, augmented by a judicious use of new information and communication technologies (ICT), are a viable option for African governments and societies that wish to expand higher education enrollments”.

3.9. Generations of Distance Education

Across the generations, it is clear that educationalists were looking for communication tools in order to support distant learners in their studies. Literature shows how learners struggled and suffered in their studies. The gap between the enrolment and completion rates of distant learners (Audet, 08) highlights this point. Table 3 gives a summary of the mentioned tools across the five generations of distance education.

Table 3: Five generations of Distance Education

Models of Distance Education and Associated Delivery Technologies	Characteristics of Delivery Technologies				Institutional Variable Costs Approaching Zero
	Flexibility			Advanced Interactive Delivery	
	Time	Place	Pace		
First Generation - The Correspondence Model <ul style="list-style-type: none">Print	Yes	Yes	Yes	No	No
Second Generation - The Multi-media Model <ul style="list-style-type: none">PrintAudiotapeVideotapeComputer-based learning (eg CML/CAL)Interactive video (disk and tape)	Yes	Yes	Yes	No	No
	Yes	Yes	Yes	No	No
	Yes	Yes	Yes	No	No
	Yes	Yes	Yes	Yes	No
	Yes	Yes	Yes	Yes	No
Third Generation - The Telelearning Model <ul style="list-style-type: none">AudioteleconferencingVideoconferencingAudiographic CommunicationBroadcast TV/Radio and Audioteleconferencing	No	No	No	Yes	No
	No	No	No	Yes	No
	No	No	No	Yes	No
	No	No	No	Yes	No
Fourth Generation - The Flexible Learning Model <ul style="list-style-type: none">Interactive multimedia (IMM)Internet-based access to WWW resourcesComputer mediated communication	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	No
Fifth Generation - The Intelligent Flexible Learning Model					

• <i>Interactive multimedia (IMM)</i>	Yes	Yes	Yes	Yes	Yes
• <i>Internet-based access to WWW resources</i>	Yes	Yes	Yes	Yes	Yes
• <i>Computer mediated communication, using automated response systems.</i>	Yes	Yes	Yes	Yes	Yes
• <i>Campus portal access to institutional processes and resources</i>	Yes	Yes	Yes	Yes	Yes

Source : Taylor (1995).

One of the characteristics of Distance Education is the flexibility given to the learners to learn at their own pace, time and location. This has started with the first generation. In this context flexibility means that the learners are left on their own to manage their studies. It also implies that no systems were controlling or obliging them to submit their work.

Table 3 points out the different communication tools that Distance Education made use of across the generations. The aim was to find ways and means to communicate easily and quickly to distant learners in their studies. The third generation has introduced the synchronous, tele-learning model tools like audio conferencing and videoconferencing. The aim is to be closer to the classroom model. However, the inflexibility resides in the fact that it was difficult to suit all learners as they were not all available online at a specific date and time.

The fourth generation aims at utilizing the features of the Internet and the Web. In order to go closer to the learners, “their use has been extended to the fifth generation: Intelligent Flexible Learning Model of distance education, incorporating the use of automated response systems and intelligent object databases in the context of Internet-based delivery, has the potential to provide learners with a valuable, personalized pedagogical experience at much lower cost than traditional approaches to distance education”. (Taylor, 1999). This gives room for researchers to find out how interactivity and the Web can better support learners. It calls for the tools to be used beyond the communication sphere.

Have we yet reached this level?

3.10. The use of ICT and ODL at tertiary level

Flexible, ODL motivates Africans to be enrolled in such courses with the hope of a better standard of living. It compels those who need to work for a living or are engrossed in their everyday activities, to pursue their studies.

From table 2, it is obvious that, from one generation to the next, more and more investment is needed with regards to educational research, finance and pedagogy. In order to understand how the present tertiary institutions are actually serving the society, Panchoo (10) has researched ten distance learning institutions in order to understand the types of supports that they are actually giving to the distant learners.

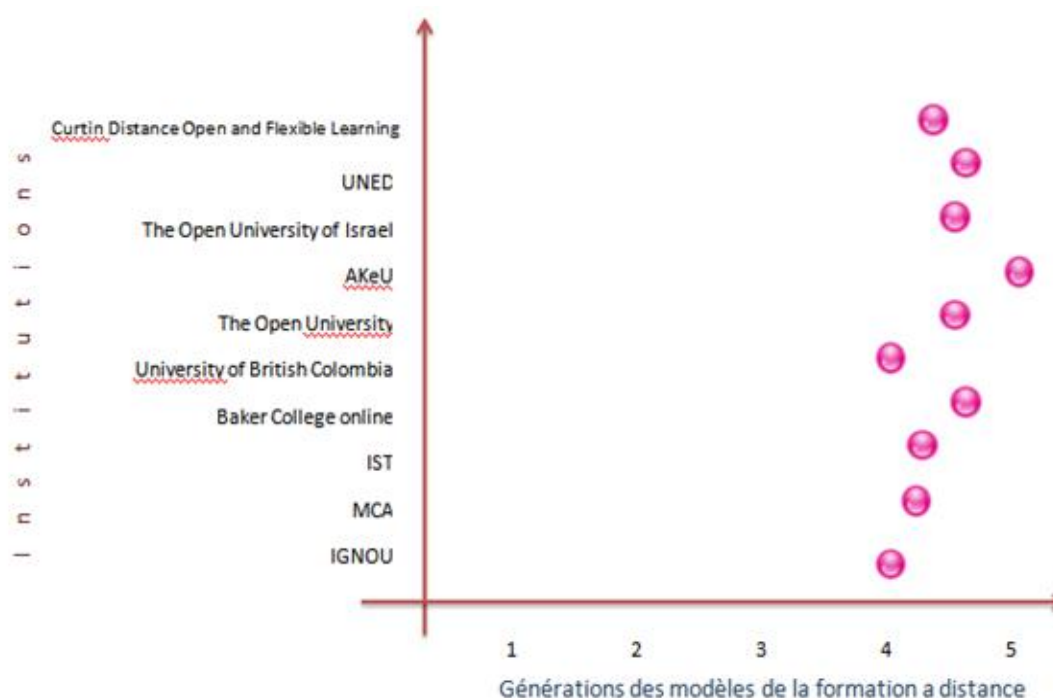
The institutions chosen for this research are shown in the Table 4.

Table 4: Ten Tertiary institutions and their practices in DE

	Institution	Courses given in
1	IGNOU: Indira Gandhi National Open University	India/ Mauritius
2	MCA: Mauritius College of the Air	Mauritius
3	IST: Institution Supérieur de Technologie	France/ Mauritius
4	Baker College Online	America
5	University of British Columbia	Canada
6	The Open University	England
7	AKeU: The best UK Universities online	England
8	The Open University of Israel	Israel
9	UNED: National University of Distance Education	Spain
10	Curtin Distance Open and Flexible Learning	Australia

As can be seen on the below, Figure 6, the ten institutions are taking advantages of the benefits derived from the use of the technology and the Internet, in the fourth generation of DE as per the classification of Table 3.

Figure 6: The position of ten tertiary institutions based on Taylor's 5 generations of DE



Source : Taylor (1995)

The learners are given access to computer mediated communication such as email, forum, chat and videoconferencing. However, even with those facilities, learners do not interact with their tutors often; this is so because they did not succeed in studying the course content to be able to come up relevant questions. This reminds us of what Hamilton said: “When we are small, we know nothing. We do not know what questions to ask”. Likewise, interacting with the teacher in face-to-face sessions is not common because not many are able to listen, process, understand the discourse and ask questions accordingly during that limited time. Questioning is important in the process of learners and it should be encouraged.

We can say that the ten institutions have to invest in relevant pedagogical model in order to encourage them to do interact. Among the ten institutions, AKeU, the best UK Universities online is the only institution which has gone a step further and has reached the 5th generation of Distance Education. AKeU has an online campus, giving the distant learners a closed environment, focusing on teaching and learning activities. Adequate supports are given to the needs of the learners.

Even in developed countries, most of the institutions are still in the fourth generation of distance education. It takes time, engagement, expertise, risk and financial investment to move from one generation to the other. Regarding to the need of Africa, it is important to make use of best practices so as to adopt the workable solutions quickly. In her doctoral thesis, Panchoo (2010) “claimed that the technologies are primarily used as a communication tool rather than a pedagogical tool”. Strategies need to be put in place in order to encourage learners to interact. Hiltz (1998) rightly said that the communication tool alone is not enough to promote learning. Numerous studies (Audet, 2008, Educacentre, 2005, Bernard *et al.*, 2000) stressed on the difficulties faced by distance learners which eventually bring them to abandon their studies.

3.11. Challenges of Distance Learners

Loads of Information is accessible online irrespective of the location and time. Developing countries are instantly informed of the latest developments, trends and researches done by advanced countries. Thus it is imperative that Africa takes into account those findings, learn about the strengths and weaknesses of learning processes so that innovations and development can be brought in with proper knowledge and confidence. It is a well known fact that there is a gap between academics and practitioners in the field of education (Green and Perras, 2010). There should be more interactions among them.

Today, a wide range of communication tools are available to the distance learners but, learning requires personal efforts of the individuals. Everybody has the duty of learning for himself. However, studying alone requires additional determination and motivation in order to understand one complex concept to the other. The process of updating information in our brain can be lengthy, tedious, depending on the prior knowledge, determination and efforts from the students.

In Africa, as mentioned earlier, despite the birth of Distance Education since 1873 (Murthy *et al.*, 2002:30), educating Africans is still one of the top priorities. This is mainly so because there is a big gap between those who enroll in such course and the successful completion rate. It is a fact that, distant learners around the world face much difficulty in their learning endeavor. It is worth investigating on such difficulties in order to propose and implement educational frameworks based on the needs of the distant learners.

3.12. Dropouts of distant learners.

Prior to distance education enrolment, distance learners are motivated intrinsically and extrinsically. It is the desire to succeed, to dream of better employment and status, which lead them to underestimate the workload involved. They are blurred by the marketing of the educational institutions whose purpose is to increase the number of learners (Panchoo, 2010). After the registration, the institution makes available to the learners relevant resources. With the first generation of Distance Education, all the learning materials with all the assignments were sent by post to the learners. Today, the communication process has changed: with the advent of the ICT, the materials are easily and quickly downloadable.

Sadly, the numerous problems faced by distant learners are ignored and the high rate of learners' abandoning their studies is alarming (Audet, 2008). According to the same author, 60% to 70% of learners who joined distance education programs did not actually complete their studies. Dobbe-Semanou (2010) declares that there is high rate of African learners who drop out from their courses or they repeatedly enroll in the same courses. Glennie (2007) who investigated on

distance education in Africa, also claims that “only a small portion of distance education learners, in a three year programme actually complete their course.

There are numerous factors which may hinder them from being successful. Bourdages (1996) finds out the following variables which may contribute in de-motivating the learners in completing their studies:

- Demographic variables such as age, sex, marital status or social origin;
- Environment variables such as family, employment, physical or geographical conditions or changes in life style;
- Institutional variables such as courses, educational assistance, the workload level, relevant feedback;
- Learner characteristics with regards to learning style, educational background, motivation, courses and programs opinions.

Those factors (individual, environmental, organizational and attitudes) are also supported by Bean (1982). They may deter the learners, in one way or the other, from persisting in their learning process. It is worth mentioning the studies of Dodds and Mayo (1992:31) who confirmed the high dropout rates of learners in Africa. They have reviewed secondary education programs using ODL and the results they obtained, highlight that “the younger the learner, the more likely he or she was to fail”. This is so because, at an early age, it is more tedious for the learners to get out of their difficulties alone. They are not yet autonomous learners.

In Africa, the rural areas are less developed. Schools in remote rural areas are void of basic infrastructure, lack adequate resources and are poor in giving teaching and learning supports. “The low quality teachers and the high rate of teacher turnover in those rural schools do not contribute in helping the distant learners in their learning” (Ankrah-Dove, 1992). Quality learning materials, pedagogy and human supports are almost inexistent. According to the same author, “facilities are inferior and teachers are unable to offer a varied, specialized and up to date educational experience to their pupils”. “Rural school children drop out earlier and achieve less well in school than their urban brothers and sisters” (Dove, 1985).

3.13. The need for new skills

When one is used to the traditional face-to-face classroom interactions, studying in ODL mode is harder. The teachers in classroom adjust the course materials to the level of the students and spoon feed them. The responsibility of learning is shared by both the teacher and the student. However, the distant learners shoulder the whole responsibility of learning, with no direct and prompt interactions with the tutors. This has proved to be a tedious learning activity and the outcome is poor.

The integration of technologies in the educational system, requests for schools and educational institutions to review their teaching and learning processes (Sérusclat, 1997). However, those

new tools do not generate automatically the learning activities, encourage learners' autonomy and interactions. Distance education with technological support, requires additional skills on behalf of tutors and learners. It is a known fact that teachers are resistant to using technologies (Koohang and Harman, 2007, Mayya, 2007). Those basic skills need to be fully developed in teachers order for them to consider technologies as a learning tool. Quality learning materials are available online to promote the use of computers. The Commonwealth of Learning has conceived and made accessible quality materials freely.

With the advent of technology, tutors are requested to play new roles online. Learners need their tutors as guide and facilitator. The requested support refers to technical, pedagogical, expertise and philosophical aspects as well. They are called upon to assess the difficulties of the learners and interact with them through appropriate communication tools, such as web conferencing, chat, forum and email. Therefore it is important that they accept and use technologies as a supporting tool. Researches on pedagogy have shown that effective interaction promotes learning (Champion, 2005; Oliver and McLoughlin, 1997).

New skills are required and they might not be readily available in Africa due to a lack of technical and human-expert shortages. This is where quality resources developed by experts around the world can be accessed and used in educational programs. Therefore, it is imperative for both tutors and learners to have the skills of researching, selecting and choosing appropriate information on the Internet. This is a new way of learning nowadays that we cannot ignore. Having the skills to use a computer and be connected to the Internet are pre-requisites to start online ODL. Only then should learners be able to concentrate fully on the complexity of the course materials (Merisotis and Olsen, 2000). Very often, due to the inability of using electronic tools, communication problems faced by learners contribute to a large extent in preventing them to persist in their studies (Hara and Kling, 2003). Tutors are compelled to have continuous learning process, be up to date and meet the ongoing challenges.

3.14. Lack of pedagogical support to Distant Learners

Physically alone with piles of course materials, distant learners feel desperate and frustrated when learning instructions or materials are unclear or difficult to understand. Not only the tutors are unreached instantly to help them evolve in their learning phase, their fellow friends are not reachable for mutual support as well. This experience can be very hard to overcome and does not suit all learners (Kenny, 2003, Muilenburg and Berge, 2005) and they are then de-motivated in their studies (Maltby and Whittle, 2000). The absence of human support is detrimental to the learners. Bernard and his colleagues pointed out that this lack of interaction leads to dropouts, isolation, de-motivation and delays in the delivery of their work (Bernard *et al.*, 2000).

For many, the lack of regular and familiar presence of a tutor is often difficult to accept (Gilkman, 2002: 246). Bourdage and Delmotte (2001) stress on the necessity of feedback from the tutor. Those who refuse to collaborate with their tutor or peers, are more likely to abandon their studies. According to Educacentre (2005), "75 percent of distant learners drop their studies

because they feel isolated in their studies, while those who have created a relationship with their tutors or learners have 75 percent chance of success”.

It is thus clear that researches should be focused also on the pedagogical supports that technology can dispense. Nipper (1989) referred to the importance of “creating a synchronous presence to reduce the social distance between learners”. In this regard, synchronous and asynchronous communication tools enable exchanges of messages and thoughts; they can be used in supporting learners in bridging the geographical gap online. The tutor-learner and learner-learners interactions enable the learners to evolve in their studies surely, with confidence as opposite to the atmosphere of uncertainty that exists in distance education (Panchoo, 2010). According to Dodds and Mayo (1992:31) who expressed their concern regarding the high rate of failures in Africa and the lack of supports given to secondary level, claimed that “only through extensive face-to-face contacts, careful monitoring and the addition of study skill courses can we imagine the teenage students we encountered, becoming successful distant learners”.

Distance Education institutions, in addition to the administrative supports they give, have also the responsibility to define the pedagogical aspects of the course. It is true that the characteristics of Distance Education is its flexibility but studying at one’s pace, place and time does not encourage all learners to complete their studies in a limited time. Indeed too much flexibility encourages learners to constantly postpone their work till they finally abandon their studies.

Course materials developed for face-to-face sessions are void of online pedagogy and are thus not appropriate to be used in distance mode. However, instructional designing is a lengthy and costly process. In this context, it would be appropriate to integrate educational objects developed by experts and pedagogues in developed countries.

We can therefore conclude that ODL has not been able to contribute effectively to educating the learners of developing countries despite its flexibility and low cost. Instead, the digital divide gap keeps increasing in Africa. The next chapter explains the importance of ICT of both a communication and a pedagogical tool and how they can be used to reach the unreached.

3.15. Reach the unreached

It is imperative to investigate on proper usage of technologies in order to reach in the right manner those who are in need of education, from initial level to lifelong learning. The motto is quality education for all. Is it not through education that we can hope for a better society? It is true that ODL with ICT support can bring tremendous support and reach the world. Thanks to it, the world is considered to be the global village. Distance education has always been tagged as a *second chance* mode of education to those who have missed, in one way or the other, the conventional mode of education (Glikman, 2002 : 175 ; Perriault, 1996 : 187).

If the world has taken advantage of the advent of new technologies and the Internet, the education sector also thought that they would bring maximum support to teaching and learning. Massy and Zemsky (2004 :54) even foresee that “the kids will take to e-learning like ducks to water”. Indeed, the mentioned technologies have got the qualities to support the learners who, in most cases, like to make use of them. However, as we have seen, those tools alone are not able to reach the distant learners in an efficient manner. “Competency in the use of online learning technologies, particularly communication and collaborative technologies, does not guarantee meaningful interaction, collaboration, and knowledge building in online learning environments” (Lindblom-Ylanne and Pihlajamaki, 2003).

In this chapter, we discuss on the importance of setting up of a proper virtual environment enhanced with a set of functional requirements as well as the need of having a proper pedagogical framework. Furthermore, it explains how the unreached can be reached with this proposed model.

3.16. The unreached

The level of education determines to some extent the individual's position in the society. The gap between the rich and poor countries is widening. While the poor are struggling for their basic needs, the rich are progressing in all spheres of their lives. It is as if the country of birth determines the type of life one will lead. Those at the bottom of the ladder find it hard to survive. Bringing education to the people as per their requirements and needs will improve their lives. However, going back to classroom is so unlikely for so many. Distance Education and ICT can help bridge this gap by helping them develop their skills and be more productive, build confidence and eventually contribute to the welfare of the society.

It is clear that ODL with ICT support cannot reach all types of learners. For instance, those who are illiterate or those who are not autonomous, not mature enough to go through learning processes alone, will find great difficulties to struggle in their studies. All distant learners should be equipped with the computer navigator skills today. ICT is a tool and a mediator.

We shall focus on distance education with technological support with regards to the following unreached individuals:

1. **Life Long Learning:** Those who want to acquire more knowledge and experience in their fields of expertise but they are physically and mentally isolated. They are unfortunate in the sense that they do not have the required standards to be competitive. Lifelong learning is important for everybody with regards to personal, technical and professional development. Upon completion of their studies, they would be able to help others improve their educational level and professional skills accordingly.
2. **Entrepreneurship:** Those who did not have the opportunity to continue their studies due to their other responsibilities should be given the chance to improve their knowledge and skills. For instance, the mothers across the world, so engrossed are they in their everyday chores that education is out of reach for them. It is of course the society at large which suffers as educating a mother is like educating a nation. If long term courses are not appropriate for them, short term ones could be mounted for them in order to improve their existing skills and encourage them be entrepreneurs. Supports and guidance are of importance for them.
3. **Specialized trainings.** Specialists need to be trained so that they can give relevant supports to *special* or needy learners. They are those who are unable to integrate the normal system of education, such as the physically and mentally handicapped, the low level learners, the late pickups, the sick as well as the genius needing particular attention. Collaboration with specialists in developed countries is necessary in order to help the Africans acquire the specific skills in diverse areas. Such trainings given online would help improve the standard of living of the specialized trainers and the needy.

We are aiming at educating adults who, after their training, would be able to train others. Other blended learning strategies, making use of ICT and ODL, should be devised for younger learners or for those who are unwilling to be enrolled in ODL.

3.17. ODL and ICT: Supporting Tools

Taylor (1995) has qualified The Open and Distance Learning (ODL) and Information and Communication Technologies (ICT) as the fourth generation of Distance Education. The ICT tool provides flexible learning opportunities: learners have access to educational resources at anytime and from any place. They can thus learn at their own pace. However, learning is not an easy process especially when it is done in isolation and without interactions. The main problem regarding distance education is that the rate of successful completion of programmes is low. Lots of researches are done to improve this process. Jacquinot (1993) identified six types of distance constraints faced by distance learners in their learning process: they are spatial, temporal, technological, pedagogical, psychosocial and socio-economic. The fifth generation of Distance education is known as the “intelligent flexible learning model” (Taylor, 1995) and it includes the use of multimedia, automated response systems as well as campus portal access to institutional

processes and resources. However, ODL still projects the image of learners' studying alone, struggling with complex concepts, evolving in uncertain grounds without prompt feedbacks from experts. The advent of technologies has not brought enough supports to the distant learners. It is still a matter of deep concern.

ICT has proved to be very successful with regards to giving supports to routine, organizational processes. Human minds are complex and they do not necessarily behave alike in the same situation. Thus it is challenging to find defined solutions for different learning styles of individuals. Panchoo in her thesis stressed that technological tools are not enough to support tutors and learners in the educational process. She claimed that online learning requires a new way of learning with innovative strategies and pedagogies which will support learners to persist and succeed in their studies. The institution and the different actors have new roles to play. Encouraging interactions can be one important successful factor for distance learners (Panchoo, 2010).

Below are the basic factors which need to be put in place as support for distant learners. They contribute in encouraging learners not to abandon their studies. The different types of proposed supports which are suggested in this study are based on a model used by a completely online course, shouldered by AUF (*Agence Universitaire Francophone*) dispensed by the Universities of Strasbourg, Mons-Hainaut, Geneva, and Cergy-Pontoise-Paris. This programme has enabled collaboration between developed and developing countries (especially in French speaking countries in Africa) (Jaillet, 2011). For those courses, there have been no major differences found regarding results between learners in developed countries and developing countries⁷. Moreover, regarding a study on the persistence and drop-out of distance learners in Sub-Saharan Francophone Africa, the dropout rate, based on the afore mentioned model, is comparative low (average of 20%) or null (Dogbe-Semanou, 2010).

⁷ Retrieved on July 20, 2011, http://foad.refer.org/IMG/pdf/Karsentian2_FOAD_rapport_synthese_an2_A4-1.pdf.

3.18. The ICT and ODL technological support framework

Technologies allow for the construction of the right educational environment with its right tools. This is important because the Internet is a very huge network with loads of contributions from all stakeholders with diverse opinions and cultures. Without proper guidance, learners are left on their own to struggle in unknown grounds. A Learning Management System (LMS) is closed, virtual platform which possesses educational tools, in which different stakeholders (institution, expert, tutors and learners) have relevant space or block to enable them interact and play their roles properly online. This dedicated space shelters the actors and enables them to be better focused on their objectives, and eventually, they will develop a sense of belonging. If one refers to the Maslow's theory on the hierarchy of needs, it states that it is crucial to ensure that the base of the pyramid (the environment is included) is solid. When an individual is able to satisfy a need he is now motivated to satisfy a new category of his needs (Oubrayrie-Roussel and Roussel, 2001), thus allowing him to evolve in his studies "at his own pace, preferences and needs in a pleasant manner (Depover, Giardina et Marton, 1998: 139). The environment-learner interaction generates a climate of security for discussion and collaboration (Panchoo, 2010). The inbuilt synchronous and asynchronous tools promote and encourage a flexible manner for learners, with common objectives to interact, irrespective of their place and time and they decide on the amount of efforts they want to invest.

We recommend for the following set of tools be found under one 'roof', that is the construction of a virtual campus found in the Internet cloud. The functionalities are based on the requirements of distant learners with regards to supports that they need online.

Table 5. Functionalities

	Functionalities	Details
1	Learning Spaces	For formal and informal interactions
2	Communication tools	Synchronous and Asynchronous communication tools, such as forum, online classroom, chat, email.
3	Organization tools	Agenda, reminders, Short message services
4	Sharing tools	Enables collaboration among tutors and learners
5	Creating contents	Creation of quality materials and learning activities
6	Presence	Aware of the presence of others
7	Experts' Space	For interaction and collaboration of tutors
8	Administrative tools	Managing the campus and giving access to users
9	Individual office	Personal space, accessible anytime from any place
10	Open space with Web 2.0 supports	Informal sharing of information and discussions

3.19. Learning Spaces

Physical classrooms are specific closed areas which belong to a group of learners with specific common objectives at a particular moment. This set up favors a sense of belonging and encourages sharing of ideas and group work. This is a space where a teacher feels confident in his interactions as he knows the needs of the learners and they all evolve together with the same objectives towards the same direction. It is a space where learning is supposed to take place.

Likewise, in the virtual environment, such spaces should be built in order to encourage interactions relating to education. Meetings with tutors and learners should take place at specific moments in order to bring learners back to their studies from their other activities. This is a solution to those learners who continuously postpone their studies till they drop outs of the course.

Learning spaces such as virtual classrooms, resource centers as well as group work spaces should be built with relevant tools in order to enable formal and informal interactions to take place among the actors. Given such an environment, their mind will be more focused on their learning objectives. With the wide range of interesting applications available online, the learners are easily distracted.

3.20. Communication Tools

Learners should be given the possibility of communicate easily during his learning process. If with the last generations of distance education, communication was difficult and lengthy, technologies enable synchronous and asynchronous communications, suiting the diverse needs of individuals. Rapid, interactive interactions promote learning to take place. This is what is most favored in classroom interactions. Through the communication tools, tutors are able to give timely, pedagogical supports to the learners.

Those tools provide flexibility in learning by enabling learners to communicate, exchange, negotiate, and interact with the learning community of experts, tutors, learners and practitioners for knowledge building (Panchoo, 2010). According to Karsenti, Savoie-Zajc and Larose (2001), “the information and communication technology promotes and maintains motivation in the learning environment”. With regards to the asynchronous tool, like the forum, there are many exchanges of ideas on diverse themes on the Internet. When it comes to education, forum enables learners to voice out their queries and, as it requires no prompt interaction, it gives them enough time to think before replying. However, very often, there are threads which are unanswered which can be frustrating. For Devaux *et al.*, (2009:7), a forum is primarily a tool for learners to support each other.

Electronic mail enables tutor-learner, learner-learners interactions easily. According to D'Halluin (1995), it is the tool which enables coordination. Writing contributes in the learning process because it enables one to think and then formally expresses his thoughts. Learning takes times and is not spontaneous. Distance education gives the opportunity and the space for learning to take place.

Synchronous communication tools, namely chatting or video conferencing, are used as a supporting tool which requires for the individuals to be online at the same time. Some might argue that they are inflexible and rigid but, the rapid interaction dissipates uncertainties, promotes understanding, interaction and learning. The two way exchanges enable the tutor to assess the learners' state of mind and guide them accordingly. However, those who are unable to be online at the specific time will not be able to participate. They should be able to view the recordings. Short Message Service (SMS) is also used nowadays to support learners in their learning, by making available multiple choice questions (So, 2009).

For these tools to be effective in promoting learning, it is important that they are used in a pedagogical context, guided by the tutor. A tool which is not used properly in its context can be annoying and frustrating.

3.21. Organizational Tools

Adults, engrossed in their everyday chores need tools to help them manage their activities. In the e-campus, it is thus important to include calendars to remind learners of online meetings, deadlines of assignments or other activities. SMS, Short Message Service, can be sent to learners to remind them of meetings, deadlines and important activities.

A mobile research supervision initiative was conducted at Makerere University with the purpose of guiding distance learners who were completing their final year field research projects, using mobile phones. Results show that this experience created “a virtual community of practice amongst research learners and their supervisors and motivated lonely distance learners in the field” (Muyinda, Lubega and Lynch, 2008).

At the University of Pretoria, most of the learners who are enrolled at the distance education unit, even those who are from remote rural areas of South- Africa, have a mobile phone, and the university used SMS for basic administrative support during 2002. In 2004, they explored how academic SMS can be used as a learning support tool (Viljoen, Du Preez and Cook, 2004).

3.22. Sharing tools for Collaborative learning

The virtual environment should be built in such a manner that enables learners to collaborate. Formal and informal spaces will enable them interact. Staff rooms, group work spaces are surroundings will dissipate the loneliness atmosphere that exists at distance. Struggling alone

with complex problems to solve in a particular time frame is stressing and learners have the tendency to continuously postpone their studies. This problem can be taken care of by opting for the physically isolated learners to virtually cooperate and collaborate. They can then support by interacting with each other.

The literature favors this socio-constructivist approach with regards to active learning (Panchoo, 2010). Glaser (1990) even goes to the extent of saying that it would be difficult to prove that learning did not take place with such an approach. The relationships developed among the learners encourage mutual help and support. The learners, therefore, no longer feel isolated in their studies. Researchers (Shallert and Reed, 2003; Cifuentes and Murphy, 2000; Kruger, 2000) are of opinion that online collaboration contributes to the learning process. The latter involves understanding, studying and discussing on the writing of tutors and peers.

3.23. Creating course contents

The course content-learners interaction is essential as it guides the learner towards meeting the goals of the course. It is challenging to translate and convert thoughts and ideas through writings for different levels of learners. Moore (1989) described this type of interaction as an engagement between the learner and the learning object which bring changes to the understanding and cognitive structure of the learner's minds. Books and printing materials are sources of knowledge but they are limited in the sense that they need to be complemented by interactive learning materials.

The quality of the course materials designed for online learners is of prime importance. The more the learners interact with the course material, the more chance they have to be successful in their learning process. Experts in their areas of expertise should collaborate with computer programmers to develop, with the help of multimedia, the course materials for learners with different learning styles. Interactive learning activities, games and simulations are some examples of actions which could be inserted in the course materials in order to enhance and encourage learning. For instance, a speech therapist, a psychologist, a pedagogue along with a computer professional could collaborate to help individuals with their pronunciation.

On the e-campus, it would be beneficial to have relevant software which would guide subject experts in shaping their contents with quality instructions and interactive learning activities. This process of instructional designing ensures that the effective learning will take place through the content-learners interactions and that learning goals are accomplished. Such software is accessible freely online and can be integrated in the virtual campus.

3.24. Presence

Studying complex concepts alone has proved to be very de-motivating for many distant learners. This *presence* functionality shows the existence of others while they are simultaneously online. By displaying the presence of online individuals, distant learners do not feel lonely but they

form part and belong to a community of learners. This enables them to reach others and exchange instant messages. It therefore strengthens the bonds of friendship among tutors and peers. The presence of others in class is highly favored as it helps learners with the same difficulties to support each other.

The element of socialization is important in the learning process because it helps in consolidating group cohesion among learners. It has been found that learners who experience a greater social presence from their classmates believe they learn more in online classes (Richardson and Swan, 03; Swan, Mitrani and Schoener, 1990). Seeing the presence of others encourages the creation of relationships. It allows learners to share their grievances and help each other, thus discouraging them to drop out of the course.

3.25. Experts' Space

Collaboration of experts and tutors are important for the benefits of the learners. In the case of Africa, it is imperative that experts in developed countries collaborate with less fortunate ones so that guidance, experience, knowledge, learning materials and technologies could be shared. It is a known fact that the Internet is a huge database of resources found across the world, developed for different contexts, learners and cultures. Learning objects need to be customized for better relevance and effectiveness. Experts can thus advise on the learning strategies and the available learning objects which can be used in the local context.

The above mentioned area should consist of synchronous and asynchronous communication tools as well as a relevant space to enable sharing of documents and ideas. In this manner, experts ensure that Africans are given access to quality learning materials. New findings can help Africa develop quicker. Hence, this opens for more grounds of research from developed and developing countries.

3.26. Administrative tools

To manage the e-campus, the administrator needs relevant tools to help him enroll, communicate and assign appropriate spaces to distant learners. For technical problems encountered by learners, the administrator should make sure that the mentioned problems are solved at the earliest. The administrator should be given administrative and organizational tools to enable him administer the institution through the virtual campus.

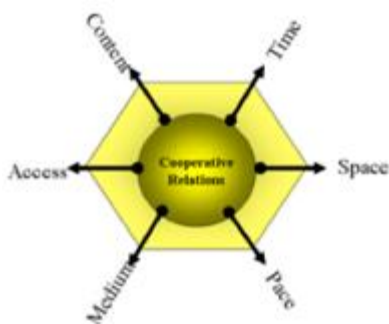
Administration issues can hinder the smooth running of online educational activities. It is thus important for the administrative issues to be sorted out at the earliest. For instance, learners due to a miscommunication, learners may miss their online tutoring. As mentioned earlier, SMS has been an effective tool in reaching the distant learners rapidly.

3.27. Individual office

Learners enrolled in online courses would benefit from knowing that an allocated space belongs to him in the virtual campus. It is a location in which his personal virtual belonging could be stored. He can upload his assignment and access it anytime and from any place. This flexibility gives him the freedom to work at his own pace and he manages his resources and studies. Communication tools, agenda and related functionalities will allow him to manage his electronic resources and studies.

We refer here to the hexagon of cooperative freedom which emphasizes on the distant learners' needs to cooperate and to enjoy freedom as well (Paulsen, 1993).

Figure 7: Hexagon of cooperative freedom



Source : Paulsen, (1993)

The Hexagon (Figure 7) is based on six vectors: time, space, pace, medium, access and content. They contribute in giving the learners' the freedom and flexibility of managing his studies. Even at a distance, he has a strong sense of belonging, which caters for "the element of uncertainty that exist at a distance" (Panchoo, 2010). The group work also is important to enable the learner confirms his knowledge and which gives him ground to climb the knowledge ladder.

He should also be the mediator among the different actors. He plays a key role in making sure the learning platform is maintained and updated at the earliest with the requests of the tutors and learners.

3.28. Open space with Web 2.0 supports

The e-campus should also contain a wing whereby the actors could participate and share information informally on all issues which are of interest to them. Web 2.0 applications such as wiki, blogs, video sharing and related applications would enable them build social networking ties. This open space should welcome all actors on the campus, irrespective of their course. This atmosphere encourages learners to interact and builds group cohesion; advices and supports can be obtained by peers. Resources can be shared and discussions can take place.

Through synchronous and asynchronous communications, learners will naturally interact informally without stress. The main problem of loneliness regarding distance education can here be solved as the new generation of learners is very much used in using Web 2.0 applications. Discussions will flow naturally in such environment.

3.29. The ICT and ODL pedagogical framework

Across the various generations of Distance Education, communication tools were adopted with the aim of promoting learning. However as we mentioned earlier, the tools on their own do not encourage any learning to take place automatically. Relevant learning strategies should be devised so as to encourage the learning process of learners.

Along with the virtual environment described in the previous section, a pedagogical framework needs to be conceived for the interest of the distance learners. It has to be noted that local educationists and pedagogue need to find learning strategies in order to work towards reaching learners more effectively. We should find ways and means to motivate learners to persevere in their learning. In this regard, taking into account the needs of distant learners as well as the strengths and weaknesses of face-to-face classroom interactions, the following pedagogical framework has been devised in order to enable reaching the unreached.

With regards to learners' supports, the following framework stresses five important poles (Figure 8):

1. Technology
2. Contents
3. Pedagogy (adjustable)
4. Group
5. Individual (tutor/learner)

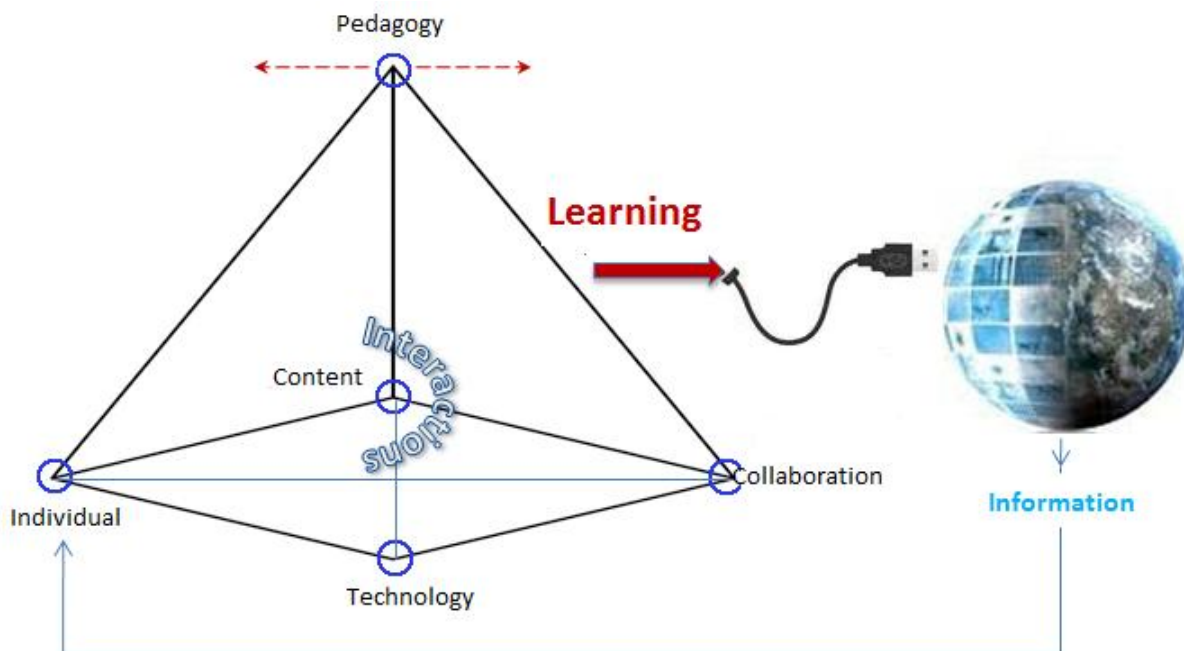
For effective learning, those elements should interact with each other. It contradicts the idea that learners can study alone. It was affirmed by Vygotsky (1997) who recognized that "under the direction and with the help of someone, the child can always do more and solve more difficult problems than when alone". He continues by saying that what the child learns to do today in collaboration, he will know how to do it without help tomorrow. Indeed, they need to interact with the course content and discuss with their peers; they need to compare, argue in order to confirm and increase their knowledge. We are convinced that learning takes place through interactions, whether with objects or living creatures (Panchoo, 2010). Even as a human being, we are a product of continuous interactions we keep having since our conception.

As for the contents, Africa is in such a situation that, it has to make use of quality materials and best practices that are already available. Content materials need to be personalized, customized for proper usage in their lifestyle and local culture. It is important that learners feel at ease, involved and be in the context in which the learning is done. As for the learning activities, it

should be more oriented towards solving complex problems in groups. Formative evaluations are encouraged.

The mentioned elements are represented in Figure 8.

Figure 8: The learner-centered pedagogical interaction framework.



This diagram shows that, for learning to take place, any individual (tutor/learner), by means of the technology, interacts with the content and collaborates with the tutor or peers. Note that pedagogy is adjustable: the content and learning activities and the relevant tutor-learners should be customized for the specific learners. Once the learner understands the objective of the course (content-learner interaction) and after collaboration (tutor-learners and learner-learner interactions), he or she will be able to search and choose for relevant information on the Internet. The searched information is processed and added to his existing knowledge after relevant and constructive feedbacks from the tutors and peers. The tutor evaluates the learner's effort accordingly. The pedagogy pole is flexible and should be adjusted according to the context, learners' background and education background. This framework is dynamic: it stresses on the need for adjusted pedagogical supports to be given to distance learners through relevant quality interactions with content, tutor and peers across time.

The tutoring or tutor-learner interaction is of prime importance. It will need to be adapted to the learner groups. This is why the role of the online tutor is different from his face-to-face discourse. Instead, it is more challenging as prompt interventions and actions are expected from him. His involvement differs depending on the types of communication tools used for supporting

the learners. For instance, interaction in a forum is different than in using the synchronous *chat* application. He may lecture and reach his learners via videoconferencing or he may upload his interactive course materials for learners' access. What is crucial in online and distance learning mode is the availability of the tutors to reply to the learners' questions. Learning is not immediate nor is the learners' reaction. Some will take more time than others to understand and formulate a question. With the multicultural background, questions are phrased in different ways and thus could not be programmed easily. The pedagogical elements should thus be adjustable.

It is imperative that in learning process, the tutor's and learner's roles are clearly defined for smooth running of the course, without misunderstandings. Learners now need to study differently, while interacting with others, in a social setting. The tutor needs, above all, to be present and available online. He should listen to the grievances of learners, understand and guide them towards meeting the objectives set. Rapid feedback and constant monitoring of the tutor encourage learners to persist in their studies. The tutors' roles are challenging and they have very important tasks to do in motivating learners in persisting in their studies. Above all, the learning strategies, the right tools, the right contents have to be used with focus to the learners' needs.

3.30. ODL and ICT: reaching the unreached

Technology has many advantageous characteristics for learning that we cannot ignore. The process of acquiring knowledge is different today with technology and the Internet. The learning process should be reengineered, thought differently while taking into account the present context. The technical and pedagogical frameworks described above stress on the importance of changing the mindset of tutors and educational leaders in the need of educating the learners differently today, because they are evolving in a different learning environment.

It would be unrealistic to affirm that ICT and ODL can reach all types of learners. Autonomous adults with good interpersonal and communication skills, determined, objective oriented, are those who are most likely able to manage their responsibilities and strive in negotiating, collaborating and interacting with learning objects and humans in his learning endeavor. It would be advantageous therefore for distant learners to possess “social learning skills, discursive or dialogical skills, self and group evaluation skills and reflection skills” (Dabbagh, 2007, Comeaux *et al.*, 1998, Spector, 1999).

As mentioned in section 3.1, we shall consider three types of distant learners. They shall all be given access to the e-campus and the pedagogical framework will enable them have relevant supports in their studies.

3.31. Initial and Life Long Learning

It is always beneficial to education nations. In Mauritius, the aim of the government is have one graduate per family. It would be inappropriate to think that all learners would afford to go back to classroom. With the right environment and pedagogy, ODL and ICT can be used to reach and support those who have missed their initial education. Or there may be individuals have got a basic education in their field of expertise but they are now isolated and not competitive. ODL can be an appropriate means to help them develop professionally. Also, those living in the rural areas with limited resources can have access to the distant courses as well. Once they have been trained on how to use the virtual environment, they would be able to circulate in it and have access to tools and resources. They are encouraged to interact with the learning community.

Referring to the pedagogical framework (figure 4), the individuals (tutor and learner) will interact with the course materials and perform the learning activities. They shall collaborate with their peers and tutors via the technology with the aim of learning. The tutors will have to adjust their teaching and learning strategies to suit the needs of the learners. Online meetings need to be conducted in order for the learners to express their feelings and problems they are actually encountering. The tutors here, as claimed by researchers (Panchoo, 10; Audet, 08, Northrup, 01), have big responsibilities of supporting, guiding accompanying and taking care of the learners, through feedback, listening, helping them in different levels of problems. Relevant tools will be

used accordingly as support: SMSs will be sent to inform them of administrative issues and pedagogical activities. In the long run those qualified individuals will play an important role by supporting and encouraging other learners in their studies.

3.32. Entrepreneurship

The African mothers are capable and they are the ones who sacrifice themselves for the development of the family wellbeing. According to Panchoo and Agarwal (04) who researched on the status of women in Mauritius, it has been found that, “among the factors which have acted as deterrent to continuation of their studies, family (25%) and financial constraints (22%) are the major constituents; some have the means but did not have the opportunities (18%). Today there are various opportunities available in Mauritius and they could easily be enrolled in ODL courses.

For those women who are less educated and who have left education since long and are unwilling to be enrolled in formal education, they can be empowered through short term courses, like, entrepreneurship such as bakery, fashion and design courses in order to improve the quality of their skills, expertise and lifestyle. After an initial course in face-to-face sessions, they would be taught how to log in the virtual campus and be enrolled for different short courses which would be of interest to them. As defined by the pedagogical framework, the courses should be pertinent and would give them clear guidelines of how to be entrepreneur. The tutor again would encourage them while answering their queries with confidence. Studying and working in collaboration will no doubt enable them share their ideas and they can even jointly start a business.

3.33. Specialized trainings

The unreached are those who are not able to integrate the normal system of education. Due to the unavailability of specialized institutions, they are left behind. Special trainings and guidance have to be provided to them. Africa, due to lack of resources, does not have the necessary and appropriate expertise/resources to integrate learners having limited capabilities to the mainstream of the society. This is where ODL and ICT can be beneficial. The learners will evolve in the virtual environment with relevant supports and guides.

Experts and researchers in the specific fields in developed countries should provide their course materials online and which should be accessible to local tutors (in Africa). The latter would then appropriately support the learners enrolled in the distance course, with relevant and supportive examples in the local context.

Referring to the pedagogical framework, the distant learners will be given access to quality materials and they will interact with experts abroad and local tutors in order to acquire knowledge and skills. They will be specialized in their relevant field and at the end of the course; they will be able to help the needy individuals accordingly.

3.34. Implementation: Strengths and Weaknesses of ODL and ICT

Related studies and improved frameworks and models on ODL and ICT are still being researched worldwide. It is clear that ICT is still not used to its optimum capacity. The proposed synchronous and asynchronous tools proposed in the virtual environment are already yielding results and encouraging collaboration among pairs. It is therefore convenient to assemble them and make them accessible to all stakeholders for common usage, thus encouraging them to evolve together towards the same objectives. This accommodation caters for grouping the learners together, virtually, so that they do not feel lonely in their studies. Those tools have the capacity to prompt the geographically scattered learners, to interact with each other formally and informally in a natural manner. Human beings are known to socialize easily.

Today, with the advent of technologies, the pedagogy aspect has to be rethought and re-engineered to suit the present day requirements. Internet has changed the way learning is done and the teacher is no longer seen to be the main owner of knowledge. On top of the virtual infrastructure, the learner-centered pedagogical interaction framework is proposed as well. It requests for stakeholders to collaborate in the mentioned virtual environment with the aim of learning. This framework has been designed with the aim of guiding, orienting, encouraging learners to do learner-tools, learner-resource materials, tutor-learners, learner-learners interactions. The tutor's role is different from his conventional role as a teacher: he has the responsibility of listening, understanding and assessing the learners with the aim of helping learners acquire the defined learning objectives. Depending on the background, levels and culture of the learners online, the tutor will have to adapt his materials, learning strategies, objects, activities and discussions accordingly.

Today, technology leapfrogging in Africa is seen to be highly positive (Gatune and Najam, 2011), as there is no resistance in its use. It is therefore imperative to boost the research on how to make optimum use of ODL and ICT in education. Regarding the implementation of the above supports, to start with, open source Learning Management System (LMS) could be used. At a later stage, a virtual campus could be developed with the relevant analogies and metaphors for a better representation. Regarding the pedagogical support, it is important to promote interactions at the earliest. The existing distant learners, with the relevant supports will be encouraged to complete their studies. In this way, other learners will be motivated to enroll in distance education as well.

To implement the environment and the framework, no major investment is needed in the short term. However, it is important for learners to have computer access easily as well as a consistent Internet connection in order to enable them collaborate anytime and at any place. It is necessary for them to know how to use the virtual campus, therefore it is important to organize face-to-face sessions to demonstrate and teach them how to make use of it.

Regarding the course content, it is important to look for collaboration with experts in the field. Also, open source learning objects have to be searched and modified by local tutors in different

fields. The materials can be improved and re-used in the future. This process is time consuming. Collaboration among stakeholders may not be a common practice and should therefore be taught. With this type of model, it is recommended to have small groups of learners working together. Therefore it will be unrealistic to think that ODL and ICT can bridge the digital divide rapidly. The successful learners would be called upon to train the other learners in the future.

To give better service to the learners, it is a challenge for institutions to be updated with the latest practices. It is therefore necessary to set up partnership with European or developed countries so that the outcomes of researches are implemented at the earliest for better results. It is true that this process is slow due to ignorance or to resistance to change. This could be a barrier to rapid changes. However, with globalization, Africa has to be up to date in order to be competitive.

In the future, learning agents have to be developed so that the learners are able to receive the first level support right away. The element of time is important in learning. If the right information is not obtained at the right time in the right way and supported the right tutor, learners can be de-motivated and learning will not take place or be effective.

4. ODL and 'The Forgotten of Africa': The scope and implications for educating African prisoners online.

Dev K BOOJIHAWON

4.1. ODL in Africa: reforms and realism

The needs and challenges of organising for and delivering ODL is not a new story for Africa. As a mechanism contributing its socio-economic development, ODL has been accepted as an indispensable part of the mainstream educational systems of many African countries (UNESCO, 2002). This acceptance has been stimulated in part by the globalisation of distance education and a growing need for continual skills upgrading and retraining; growing interests in technological advances and use of new, Internet-based and multimedia technologies to design and deliver ODL, and also by the recognition that traditional ways of organising education in Africa will need to be reinforced by innovative methods, if the fundamental right to learning is reached and realised by all.

Hence, for the past five decades, ODL has increasingly figured prominently among the education strategies of most African countries to fulfil their educational needs. So far, many of these countries have already made considerable use of distance education to extend access to formal education to many diverse audiences, and all of them have invariably encountered the same difficulties in several guises: lack of finance, academic resources and conviction.

Although some countries have and continue to deal with these issues better than others. Most efforts and resources of ODL have concentrated to explore its ability to offer a second lifeline to everyone most deserving the right to education. In a comprehensive review on current developments and prospects of ODL in Sub-Saharan Africa (SSA) WGDEOL (2002:10) concluded the following: “Distance education can be aimed at providing people who have missed an educational opportunity at one level or another a way to recapture what they have lost without necessarily going back to the classroom. In other words, distance education can provide people with a second chance to receive education”. Indeed, such a visionary note underpins the foundation of many of the world's open universities and aim to open the world of higher education to all, irrespective of age, sex, place of residence or occupation, in order to enable every individual to realize his or her academic ability (Wilson, 2008).

However, problems of inequalities and access to higher education continue to persist in Africa as elsewhere (Smith & Casserly, 2006; Brennan, 2004; Bekhradnia, 2004; Badat, 2004; Open Content Initiative, 2006). This inequity manifests itself at an individual country level in the form of differences between the facilities and academic resources provided by various institutions. In reality, right of entry to education is much more likely in prosperous countries than African countries (Tomasevski, 2006). There are millions of people in Africa particularly marginalized and vulnerable and/or unreachable groups who do not have access to higher education thus limiting their capacity to contribute to national development. The rural dwellers, the poor particularly girls and women are often quoted as examples of vulnerable audiences who face serious barriers to higher education, and rarely among these audiences are prisoners mentioned at all; no doubt, they are referred by some as ‘The Forgotten of Africa’ (Wines, 2005). It would seem that the widening participation efforts of ODL providers in Africa have neglected the concerns of prisoners as individuals as deserving of the right to education and a second lifeline as anybody, and this paper starts with a strong belief that such concerns need to be brought to the fore of the debate of ODL provision in Africa.

This paper aims to open discussions around the plight of education for prisoners in Africa, and the potential and scope that new online technologies provide to reach this audience of ODL whilst highlighting some the strategic and operational issues underpinning the provision of ODL to prisoners in the African context. The method adopted here is largely desk-based research and draws insights from an in-depth case study of the design and delivery of a fully online course of The Open University (OU) in UK, reversioned as an offline course for prisoners in UK. The paper is organised as follows: Section 4 reviews the state of prisons and prisoner education in Africa, and the scope offered by ODL to reform and rehabilitate prisoners; Section 5 describes the deepening role of The OU (UK) in Africa; Section 4 discusses the case study and issues around the development of ODL for prisoners and Section 5 provides a broad reflection on the implications for designing and delivering online ODL to the complex unreachable environments of prisons anywhere, and particularly in Africa.

4.2. Educating ‘The Forgotten of Africa’: The case for ODL in African prisons

Prisons and prisoners’ education in Africa is an abysmal and sad state of affairs. Literature reviewing the state of prisons in Africa, with the exceptions of Dissel (2001) and Wines (2005), is limited, mainly because prisons in Africa are diverse, complex, isolated and enclosed entities which makes them difficult subjects of study. On the main, prisons in Africa, or anywhere else are meant to carry out rehabilitation programmes aimed at training, counselling and reforming prisoners in giving them a second chance in life, albeit, an opportunity to contribute to their country’s national development. In terms of the legislation, every convicted prisoner is urged to engage in useful activity so that he/she learns new skills and is able to gain employment. Since

no independent organisation is allowed access to prisons, it is difficult to ascertain the extent to which this happens.

A comprehensive literature review undertaken by Dissel (2001:1) reveals some astounding narratives of the plight of prisons and prisoners in Africa. Dissel explains: “The penal systems in Africa are largely inherited from the colonial powers, and the legislative framework, as well as the infrastructure, remains largely unaltered. Although attempts have been made in several countries to improve their prison conditions, in most prisons they are still inadequate... prisons are characterized by severe overcrowding. In most cases the prison capacity is very limited and has not been expanded over time. Although the inmate to population ratios may be small, the impact of overcrowding on inmates is nevertheless severe. Coupled with this, many of the facilities are rudimentary in nature, and there are shortages of food, bedding, medical supplies and treatment, and an absence of recreation facilities. Poor conditions in these prisons inform severe health risks and had led to a number of deaths from malnutrition, dehydration, dysentery and pneumonia... Ill-treatment or torture of inmates was also reported for many of the countries. A few limited vocational programmes exist in some prisons”

However, in view of the appalling conditions of the prisons, it is difficult to conceive how education will be of any consideration to the prisoner and, indeed, challenges the perspective of this work. It does however serve the useful purpose of raising the debates and issues to think about what can be done to uplift their lives if we consider the scope and prospects that education, and ODL in particular, offers to inmates in the developed countries, however far reaching this might seem. To start, let’s face it: Prisoners are not a nice bunch but not all of them are convicts and they are human like us! Most countries attempt to educate inmates in prison so that they will be something other than inmates when they get out of prison and will go on to prove to be a useful contribution to society. Generally speaking, offenders come to prison with much less education than the average person. There is no proof that lower levels of literacy cause criminal behaviour, but it is considered to be a factor in the criminal's ways of thinking (Dobrescu & Popescu, 2010; Watts, 2010). It creates a scenario in which an individual sees limited options, and therefore, does not believe that he or she has much to lose. Also, lack of education often is associated with a lack of regard for self, manifested in limited respect for others and society as a whole (Al Saif, 2007). So, promoting education for prisoners seems sensible but is it worthwhile.

In UK, the prison service is legally obliged to offer educational opportunities to all prisoners, including those who are unsentenced, sentenced and young offenders (under 21 years old) (Wilson, 2008). The Department for Business Innovation & Skills (DBIS) is directly responsible for prison education and highlights in a number of its policy documents the role of education in preparing offenders for employment on release from prison. The emphasis on prisoner education aims to consider an offender’s journey through the criminal justice system and his or her life on release and reintegration into society. Indeed, proponents of prison

education argue that the goal of education within the prison setting is to ensure that inmates are given the appropriate skills to enable them to pursue further training on release in order to live a 'good and useful life' (Walklin, 2000: 206) with the further associated objective of making society safer by reducing re-offending (Reuss, 1999; Steurer & Smith, 2003). Offenders tend to commit crimes because a number of them find themselves excluded from employment opportunities due to low ability in literacy, numeracy and work-related skills, the greater part of the prison service's education budget is devoted to redressing these deficiencies (Watts, 2010). A broad range of provision from learning a trade to developing job-seeking skills is offered to support the prisoner's rehabilitation within society when released. This basic education is usually classroom based and provided in dedicated facilities, but The Open University and the use of ODL are seen to play an increasingly important role. Although still a minority interest, higher education provision within UK prisons has been maintained, with the OU (UK) now established as a key provider of both undergraduate and postgraduate curriculum.

The model of supported ODL pioneered by the OU (UK) with broad aim of widening educational opportunity has inspired many institutions in Africa. With regard to its own involvement with prisons, The OU's collaborative arrangements with prisons dates back to the 1970s, and currently there are around 1400 students studying in 150 prisons across the United Kingdom (Open University, 2009). At the core of this model is the independent autonomous learner who, guided by a course activities calendar and drawing on a range of 'pre-packaged' audio and text materials, can study at their own pace (Watts, 2010). The support of a tutor, either face-to-face or online, is provided to mediate the materials and aid learning and increasingly seen to be very attractive. In particular, the development of online or web-based resources are seen to have strong potential application in prison environment, where the delivery of prison education has continually struggled based on expanding inmate populations, limited budgets and limited numbers of trained teachers (Nink et al. 2009)

The OU (UK) has conducted a review of its offender learning provision and continues to work diligently via its Offender Learning Development Group (OLDG) to develop reasonable alternatives to the online elements of its curriculum in parallel with the efforts of the UK government to better resource the prison service improve the accessibility issues around ICT facilities in prisons. Alongside this alternative provision, as technology in prisons begins to be used for reform and rehabilitation, platforms are being developed that can offer prisoners safe access to online education. A case in point is the implementation of a virtual campus that aims to enable a secure and regulated web access using existing systems. Secure e-messaging, via a guardian, is anticipated and this e-innovation should allow students to access both their tutors and the Open University's electronic assessment system, representing a significant step forward (Open University, 2009).

Let us now consider the OU (UK)'s deepening roles in Africa and how such efforts in prison education can provide food for thoughts for the unreached audience of African prisoners, and potentially influence their future education and reform.

4.3. The OU in Africa: Deepening ties and building ODL capacity in Africa

As mentioned earlier, the OU was founded more than 40 years ago in the UK, with a mission to be open to people, places, methods and ideas. Today its expertise in ODL is helping to bring higher education within reach of many more people in Africa, strengthening their capacity to fight poverty and to build their economies.

Until recently, The Open University was held up as a model in a high-profile report which recommends the UK invest more than £100 million over five years to boost online learning. *Collaborate to Compete*, a report published on January 27th 2011 by the Higher Education Funding Council, says the UK set a “world standard in distance learning” by establishing The Open University. It recommends that the OU, along with JISC (Joint Information Systems Committee) and the Higher Education Academy, should lead on a £25 million initiative to develop and exploit the potential of open educational resources. This report also singles out the OU as the only public, not-for-profit higher education provider to have been conspicuously successful at working on a large scale. It cites the OU’s virtual learning environment and e-assessment system through which about 500,000 assessments were submitted online in 2009, and its supported open learning system ‘giving its 250,000 students flexibility to study when and where suits them best’.

The Open University agenda for Africa (Figure 9) is big and driven by strong conviction from within its ranks (see more on OU in Africa at: <http://www8.open.ac.uk/africa/main/>). It is the only British University dedicated to delivering learning inside Africa and has developed partnerships to deliver its innovative strategy to build capacity in higher education across the African continent. The UK’s largest university is now involved in a wide range of projects across 14 African countries, working in partnership in two key areas:

- Education: developing the skills and resources of people working in teaching, health, community support, business and government; and
- Research: into health, agriculture and biotechnology, environmental management, heritage and culture and combating AIDS and malaria.

The OU’s philosophy is today at the core of most African distance education institutions although fulfilled to a lesser extent. As an institution, its vision is to work in collaboration with African partners – delivering expertise and support rather than simply selling qualifications – in order to further social justice and educational quality and inequality in Africa. So, whenever and wherever there is a need to address inequalities in education, the Open University feels it has a role to play. As a result, the partnerships that it looks to structure internationally are bound in the conviction that in a global society smeared with inequalities, education is a prerequisite to social justice anywhere. To achieve this, OU’s education projects make use of new technology and ODL, which is innovative, adaptable, affordable and able to reach millions of students and teachers. It is actively working to train teachers, health workers, doctors and managers in Africa

via blended learning – a mix of appropriate media and methods including electronic and online learning, multimedia, printed texts and support from a personal tutor.

Figure 9. OU in Africa: The Website



In the words of Daniel Nti, the Director of the OU in Africa unit: “What we offer is not a product-driven approach or an approach of simply trying to entice students to come across to us. What we are offering is assistance to the region to create access to quality education, in partnership with key stakeholders, by leveraging our know-how, experience and resources ... We recognise that even though Africa is seen so often as one country, it is a continent that is extremely diverse in terms of culture and people. With our strategy, it is essential that we adopt a country by country approach and there is no assumption that one size fits all. We understand regional diversity and its requirements and we approach our work on an individual country basis, really aiming to understand what is going on so that we develop the appropriate propositions with our partner (Reconnect Africa, 2011). There are successful several projects supporting these words of the Director; some successful examples are as follows:

- TESSA – Teacher Education in Sub-Saharan Africa – is a pan-African network of teacher educators working to improve teacher education and training in Africa using Open Educational Resources (OERs). The Open University is a founding member of TESSA. TESSA primary OERs cover the core areas of the primary school curriculum, and focus on classroom-based activities for teachers to try out and use. Written in Africa, the OERs have been adapted for each local situation by leading national experts in Ghana, Kenya, Nigeria, Rwanda, South Africa,

Sudan, Tanzania, Uganda and Zambia and are available in Arabic, English, French and Kiswahili. The TESSA toolkit also provides guidance on use of the materials and support for communities of users and further sharing of resources.

- **ABLE-Ghana Project** - Advancing business learning for employability in Ghana. The Open University Business School (OUBS) is working with Ghana's leading business schools to ensure their courses prepare students fully for employment and entrepreneurship. The heart of ABLE Ghana is a series of practical initiatives to introduce specific changes into business schools' courses, resources and assessment, to make them more relevant, applied, and practical in the Ghanaian context. The Open University Business School is making its courses available in electronic form for Ghanaian partners to use and adapt to suit their purposes and context.
- **HEAT - Health Education and Training** - Transforming health care in sub-Saharan Africa. Community health care workers are the frontline of health care throughout most of Africa. They are vital to improving mother and child health, nutrition, hygiene, and the management of HIV/AIDS and malaria, and to reducing mortality. But reaching and training enough health workers – and doing so effectively, at low cost and to a consistent standard – present a significant challenge. The HEAT programme is a blend of theoretical and practical training. Written in collaboration with leading African academics, the 13 training modules are available both online (in the form of open educational resources) and offline in printed format, while the practical syllabus is delivered by partner NGOs experienced in the implementation of training programmes across Africa. This model enables health workers based in even the most remote areas to access materials and to remain practising as health care providers in local communities while being trained.

More of such examples can be found in the webpage in Figure 9. Next, to get an understanding of OU's blended methodology to designing and delivering courses and at the core of many of the above projects we look at the case of a course called B201 – Business Organisations and their Environments and how it was adapted as a product to suit the demands and needs for students in prisons. It draws attention to some pedagogical issues in the design of teaching and learning of online courses for prisons. It also highlights some of issues faced by higher education teachers supporting students in the prison setting, drawing attention to matters relating to access, the nature of the teaching and learning environment, and some practical and ethical concerns associated with e-learning and the problem of prisoner/student identity. The commentary considers the author's experiences as Course Chair for the past three and as an academic member of the team who designed and produced this course both in its online and offline forms. While the prisoner/student experience varies considerably across African prisons, the literature suggests that the issues discussed in this have relevance for teaching online in a variety of prison settings

4.4. B201: an online course and its offline version for prisoners

The course B201- Business Organisations and their Environments is a truly online Level 2 (i.e. meant for second year undergraduate students) course, written as online material, using a wide variety of assets via the internet, the OU library and through traditional copyright (see Box 1 for a description of the course structure and content). On its launch four years ago in 2007, the course won numerous commendations as the first fully online course of the Open University Business School (OUBS) and was upheld as one of the most innovative courses in the entire portfolio of the OU(UK) as it was leap forward in producing fully online courses at the university.

The course was innovative in structure, content and assessment. In terms of OU's methodology, it took two and a half years and a team of about twenty people with different sets of skills (from academics to web editors and programmers) to design and present the course online, and as a new venture for OUBS, this project roughly costed around £2.5 - 3 million pounds to implement. The course is based on the OU's moodle platform, and at start, took a lot of risks in experimenting with to use new elearning technologies like myStuff, Wikis which turned out to be costly corrections afterwards both in terms of time and money. Students are expected to follow a week-based calendar of study and devote around 13 hours of online study per week. There are currently over 1000 students enrolling on the course, in UK and internationally, and runs for 32 weeks every year; this cohort includes a number of African students as it is also offered in Southern Africa via an international partnership called, eDegree.

Box 1: The online version of B201

B201 examines the environments in which business organisations operate. It also looks at how these environments shape, and are shaped by, the ways in which organisations operate. It does this by using theoretical ideas about (and models of) these relationships. Students are taught in both face-to-face and online settings. The module helps them to develop their personal and professional practice in business by drawing on their own experience, whether as an employee, a customer or a stakeholder.

The module has three core themes:

- It focuses on the relationship between *theory and practice*. In its teaching and learning approach, the module encourages both reflection on practice and consideration of the implications of theoretical and ethical debates for the operation of businesses in the modern world.
- It explores the *diverse and complex* worlds of business: nationally and internationally, large and small. It also explores the diverse range of organisations that engage with business, including public bodies and the social economy.
- It uses different theoretical models to investigate the implications of different *ways of thinking* about the business environment.

There are also four blocks in the module, which expand over 32 weeks of learning:

Block 1: Encountering organisations starts by asking you, as a student, to assess your current knowledge and understanding of business organisations. It then helps you to develop your skills using the online tutor group forum (TGF) to reach a shared understanding with your fellow students. You will also work through an introduction to the module themes and different approaches to studying business organisations.

Block 2: The evolution of organisations explores how the organisations we see today have been shaped. Within a framework of systems thinking, it investigates the internal and external factors that shape business and that business seeks to influence. These include an inside, looking-out perspective, with discussions of organisational purpose, culture, structure, processes and control/decision-making, and an outside, looking-in perspective, with explorations of the ways that national culture, external control (such as law and regulation) and technological and economic environments impact on the relationships between business organisations and their markets.

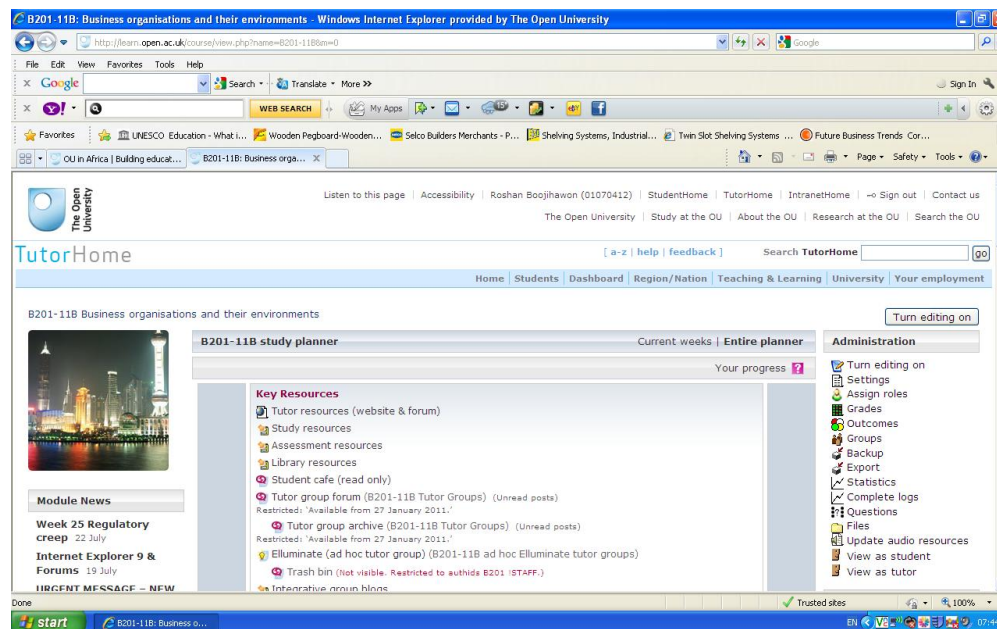
Group collaborative activity Between Blocks 2 and 3 you will participate in a group collaborative activity which will develop your online and collaborative working skills. You need to be available to work with other students at this time. As outcome of this activity you produce Assignment 04 which is a report that captures your learning and experiences of performing this activity.

Block 3: The context of organisations focuses on four sets of debates that are current in the world of business. These are globalisation, corporate social responsibility, regulation and enterprise. Each topic will be approached through case-study materials and theoretical debates about the implications of these issues for business organisations.

Block 4: Re-encountering organisations considers what organisations might look like in the future. Are newer organisational forms, such as open-source networks and social enterprises, just a transient phase? Or are such forms the start of a revolution in the operation of business? What are the implications of this for the world of work?

Throughout the module, there will be a strong focus on the practical implications of the debates you consider and how these link into your experience of the world of business. There are five assignments over the presentation of the course, excluding final exams. An essential element of the assessment, written into the learning outcomes, is the need for the student to demonstrate understanding of the need for, and the advantages of, collaboration in business and also to be able to demonstrate their own ability to both give and receive effective feedback. It is an essential course for students wishing to gain a Business Studies Degree.

Figure 10 – B201 Online



Source: <http://www3.open.ac.uk/study/undergraduate/course/b201.htm>

4.5. The need for an offline version

Two years into the presentation of the course, as a course team, we were met with sudden interests of students from prisons. These students had progressed with other Level 1 courses within the OU and were now looking at doing Level 2 qualifications. B201, being a compulsory course in the undergraduate business program, was the first they had to handle. But as educators, we had some real challenges to deal with from a teaching and learning point of view. In terms of its original design as an online course, we did not anticipate that B201 would be provided to prison students so quickly into its life as we had just finished sorting out its teething problems following its first two presentations. Further, B201 is an online course, and in principle students enrolling on the course were expected to have full internet access to be eligible to study the course. This was an explicit prerequisite made clear to the student at the point of enrolment as the online content of the course was neatly weaved into the learning process. This, however, was a significant problem with students in prison. By default students in UK prisons have very limited internet accessed (roughly 4-5 hours per week) and this was largely inadequate for them to go through the content of the course. Something had to be done, and the thoughts of an 'offline' version of the course started to burgeon.

In line with its aims on openness and access for all, the OU has accepted and facilitated students in prisons since its inception, and for this reason B201 had to conform to meet this principle. For security reasons, there have always been some restrictions on the teaching of specific courses in prison (courses requiring experiment kits for example, or courses which the prison authorities deem are undesirable for specific offenders). Historically, the OU has facilitated courses in prison from within its existing Regional and Central resources but the nature of OU course material and teaching and learning methods have been evolving, in particular with regard to the use of IT and the Internet and the development of on-line courses. Teaching methods, particularly in relation to OUBS courses have evolved to include collaborative learning and assessment. Both these factors present obstacles for presentation in prisons.

Further it is recognised that prisons are not the only secure environments within which prospective students may find themselves, there are also hospitals and those on some kinds of active defense services who live and work under communication restrictions. In line with OU values, therefore, this offline project was intended to address all circumstances of secure environments in UK and where the course travelled. For this reason and also to further the object of treating students in prison equally with all other OU students, the usual term “offender” has been replaced with the term “off-line student”, hence the name “Off-line student project.”

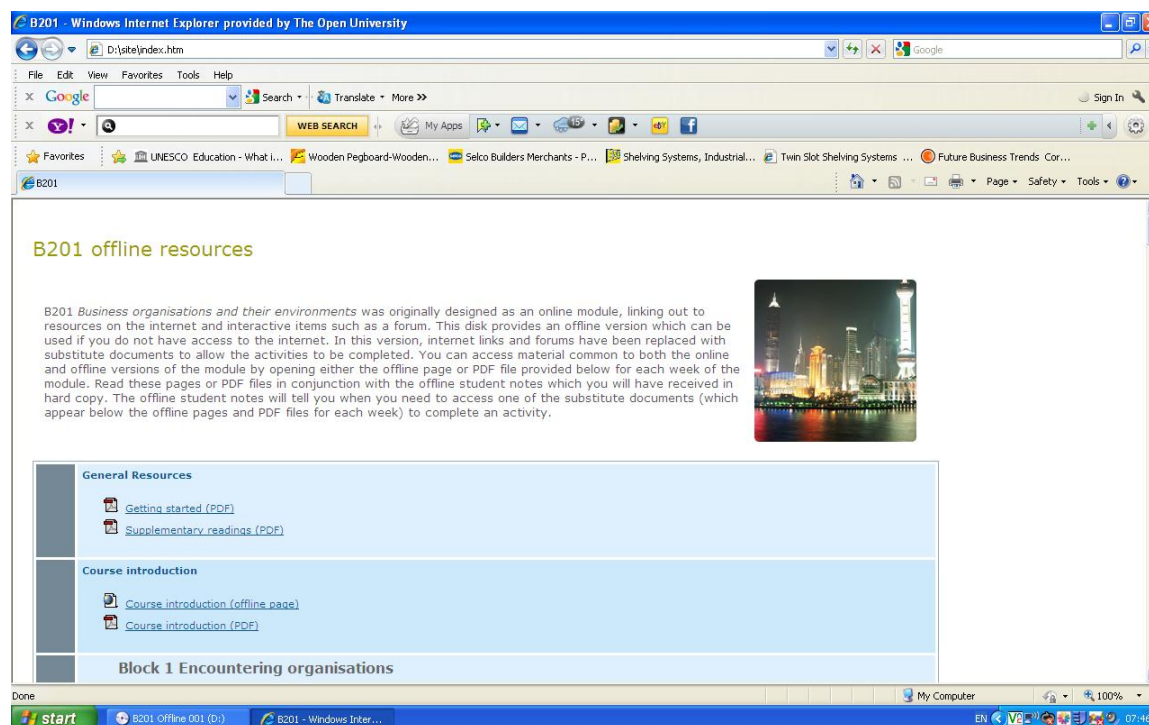
Furthermore, there was a corresponding growth in the number of offenders wanting to study business courses. Business courses are particularly suited to those seeking to prepare themselves for profitable work in the outside world and they can make a real contribution to social reform. As Bobby Cummins, Chair of “Unlock”, ex OU student and offender, government adviser and national speaker on issues to do with offender reform has said, offenders often have really good business potential, but have channeled their efforts deviantly to both themselves and to society. A realisation that there is another way of using their talents can bring about huge change, which benefits both the offenders and society. The excellence OUBS seeks to present should extend from top management to social inclusion and reform at the other end of the scale. Through addressing this area, OUBS aimed to make a real contribution under the Widening Participation banner to the OU objectives.

4.6. The final product and delivery issues

The B201 Offline Student project sought to offer a prototype which could be used or adapted for other OU courses, without the need to create separate course codes. It was an attempt to address or redress the same course in an adapted media outfit. Essentially, we had to envision and create an outfit that was able to operate without the internet and but still replicate the same experience for an offline student as the one that would be experienced by a regular student taking an online version of the course. The final package created had two elements, namely a DVD and supplementary student notes, plus an amended Assignment Booklet and Calendar that ran in parallel with the online version but with additional instructions.

The DVD was organised on a moodle platform and was loaded with offline versions of the B201 web pages. For the embedded activities, some worked without modification, for others the internet material has been downloaded, for yet others, alternative materials was provided via Word files. The course material pages operated in a very similar way to which they are experienced by regular online students. Links to audio and visual assets worked, as did 'hide and reveal' feedback. The DVD also contains pdf files of all course material as a backup. The supplementary student notes offered further guidance to students and tutors as to how to work through the course material in the offline form. These notes were kept as brief as possible and no attempts were been made to supply printouts of material students would normally access themselves online (in this case on the DVD).

Figure 11 – B201 Offline DVD



To address the collaborative work required, a modified version of Assignment 04 was created by the course team, cutting down the number of interactions needed and providing the students with a selection of case studies from which to choose, since they could not surf the internet to find their own. Students were required to submit work for comments and would receive feedback. In order to do this, it has been agreed to contract 2 or 3 pseudo (ex-developmental testers or past students) or real students who will receive the student's email and who will give comment. The offline student's messages will be sent out of the prison, either by a prison education officer or by another designated person, according to local agreement in each case. The emails will go to a

central B201 coordination point (see Regional role below) for forwarding to an appropriate pseudo student. Comment will return by the same route.

Enrolment conditions for prospective B201 offline students were modified. In minimal, it was made clear to prisons and prison education officers that students need access to a PC of the basic OU specification and a minimum of 5 hours access per week. The institution within which they live needed also to have agreed to facilitate the sending and receiving of the emails regarding Assignment 04. A simple test DVD was prepared, which could be sent to prisoners, student advisers or others, and which could also be used to test if their equipment was of a sufficient standard to enable them to use the B201 DVD.

Tutors' roles were also considered. In this case, we recommended tutors who had experience of working with prison students before, so essentially no changes were proposed to the tutor's role. The supplementary student notes provided adequate guidance to supplement the tutor's regular B201 experience. To further support tutors and regional staff, however, the B201 course team arranged to hold a briefing day for the offline project. This briefing was offered via face to face or teleconferencing participation. This provided an excellent opportunity for all stakeholders involved to share and discuss all sorts of issues around the pedagogy and delivery of the offline product. All discussions were minuted and circulated and made available even after the briefing, and the course chair, myself, and course manager remained available online for advice and guidance. In addition, it is proposed that the Regional staff on the B201 team will act as a hub of information to support those involved.

The offline is currently running its phase of presentation as pilot during 2011. Currently there are six students from different prisons enrolled and a team of four tutors overseeing and supporting these students. Six months into the running of the project and everything seems to be running as expected and the offline product is working with prisons' expectations. We have established an online tutor forum platform with the tutors to maintain regular dialogue and regularly support their work with their respective prison students, and any concerns or issues are reviewed for further amendments for forthcoming presentations. A final reevaluation of the pilot phase will formally take place at the end of 2011.

4.7. Implications for ODL in unreachable environments of African prisons and elsewhere.

The desk-based research undertaken for the purpose of this paper did not come across any such venture, as narrated in the case, in any African context, but did note the strong favours or prospects in favour of using internet-based technologies to further ODL in Africa (DEEP, 2004; Farrell & Isaacs, 2007). Online education holds strong future prospects for ODL in Africa, and if this is so, then the above experience provides various points of reflection about the design, teaching and learning, and delivery issues underpinning online ODL, and may be, its offline counterpart, particularly when we think of the unreachable contexts as African prisons.

At a humane level, the deplorable conditions of African prisons should be a matter of concern for every African and relevant authorities in every country of Africa. With so much misery among law-abiding citizens, the world's poorest nations have little incentive to improve convicts' lives. But, then, not everyone in African prisons is a convict. One can easily argue that Africa's education needs are far greater, and prisoners' education and reform would be the least of its concerns when prioritised, but I would argue that it is time to change this attitude or mindset; for all stakeholders to take a fresh look at the fate of prisoners, their reforms and reintegration into society from a humane perspective; to give them a chance to contribute to their societies equally as every individual anywhere. We all deserve a second chance, and for many African prisoners education and ODL might offer the only chance to a normal life. A further issue - that is both challenge and opportunity – relates to the persona of the student who is completely bound up with his or her self first and foremost as prisoner (Watts, 2010). On entering prison, some inmates will have physical as well as mental health issues and education or simply being a student can be last thing on their minds. Watts asserts that fostering a 'student identity' into the prisoner demands further attention, and can be understood as part of the pastoral role of the teacher or educator aimed at helping students to reposition themselves as students so that this becomes part of their social and cultural identity.

The push to educate African prisoners should come from organisations like ADEA and UNESCO in encouraging every African government to take bold steps in setting up appropriate reform programs within their legal framework and penal systems. Most African governments spend little on justice, and what little is spent goes mostly to the police and courts; prisons "are at the bottom of the heap", and very often simply forgotten (Wine, 2005). Like in the case, African governments need to create the institutional space, obligation and resources for their penal or prison systems to be legally obliged to offer educational opportunities to all prisoners, including those who are unsentenced, sentenced and young offenders (under 21 years old). This responsibility for prison education should fall within the remit of the appropriate government departments which can formulate several policy documents on the role of education in preparing offenders for employment on release from prison. Specific efforts and scrutiny can here concentrate in looking at the prospects for using ODL and online mediums to scope out education opportunities for African prisoners. (Simpson, 2009; Nink et al, 2009). In the case, of students studying in prison, access to the Internet is highly contentious and, in high-security prison settings, generally unavailable, with this mode of study further excluding the already socially excluded. Equality of access should be central to any strategy for social justice, prompting Simpson (2009) to suggest that e-learning may create ethical issues by restricting as well as widening educational opportunity.

As the case demonstrates, there are distinct challenges for educating and designing ODL materials for prisoners anywhere. The advent of new internet-based technologies has opened up possibilities but there are complexities and numerous challenges rooted in every possibility, and therefore should be adopted after greater scrutiny. For instance, access to prisons is an important

issue from a pedagogical perspective. Prisons, as secure custodial establishments, have highly controlled arrangements for the admission (and discharge) of visitors with heavily monitored protocols that apply equally to ‘official’ and ‘social’ categories of visitor. Gaining access to the prison for a face-to-face teaching can be possible but considering ODL in online form can be another issue. Another feature could be the generally negative and uncooperative attitudes of prison officers. Irwin (2008) makes the point that educators working in prisons, and students alike, are almost entirely dependent on the goodwill of prison staff to facilitate the practical arrangements to make the teaching encounter or experience possible (Watts, 2010). The lack of ‘practical goodwill’ towards the facilitation of education runs counter to the rhetoric of most prisons and the stated resolve of prison governors to give greater resource to education will not seem a priority to many African officers unless they are given themselves educated, incentivising and legally urged to think so. In this context, the teaching and learning setting, given the conditions we highlighted at the start of this paper, must be reviewed. It does not take a lot of imagination to see how stressful the lives of African prisoners are, and unless they are given the infrastructural and emotional conditions to study, education will not happen.

Africa's education systems are at the heart of Africa's future and there is now an urgent need to revitalise ODL providers so that they play a bigger role on this future and in reaching the far ends of society to improve the chances for equal access to education for all, even if they are in prisons.

5. Lessons Learnt

The number of people using technology in their everyday life is increasing at a great speed. The progress in technology is also occurring at a terrific pace as shown by the Gartner's Hype Cycle. Smart phones, activity streams, wireless power, Internet TV, quick response (QR)/colour codes, media tablets, in-memory database management system and private cloud computing can profoundly affect the way we learn.

In order to retain learners for longer periods while supporting them to achieve success, we need to shift from content delivery to content discovery. This entails effective use of ICT to deliver personalised materials in a form that appeals to him/her at the his/her doorsteps.

In order to reach the unreached (marginalised and indigenous) groups in rural Africa in terms of affording them their opportunity to education as a basic human right open and distance learning methodologies are currently the most viable means to do so given the escalating costs of providing quality education in Africa using the conventional mode of delivery, the shortage of teachers, facilities and the need to attain the Millennium Development Goals (MDGs) and Education for All (EFA) targets.

The inadequate ICT infrastructure across rural Africa and the unavailability of dedicated national ODL policies negatively affect teaching and learning using the ODL mode. Poor rural communities in Africa do not have the necessary awareness, skills or facilities to enable themselves to develop using ICTs.

People living in rural areas are still largely disconnected despite efforts being made to provide internet connectivity in some remote rural areas.

The designers' and instructors' commitment and a comprehensive understanding of the needs of the learners as well as adopting a positive attitude by not viewing ODL as second rate, and willingness to re-design learning materials to fit ODL framework, can enhance the effectiveness of ODL greatly.

ODL has its own pedagogy and andragogy. The best distance education practices depend on creative, well-informed instructors.

The successful ODL student must be focused, able to work independently and with fellow group members as well as have a number of other characteristics such as tolerance for ambiguity, a need for autonomy, and an ability to be flexible.

The unreached in rural Africa are currently not being reached by the following sectors due to their remoteness and geographical context which prohibits easy access and delivery of the much needed services enjoyed by the rest of other communities in each African country.

BOCODOL developed a remote learner strategy. The strategy is being implemented within the framework of a decentralised learner support system anchored on the use of five strategically located regional centres. It provides learning support sessions through community study centres (CSCs) and learning satellite centres (LSCs).

Almost all African nations have established some form of distance education as an educational alternative for at least one educational level. However distance education and ICTs are not yet significantly contributing to educating the African nation. The potential for distance education is to help improve educational quality and access is becoming more recognized and funded in Africa as new initiatives are developed and adapted. It is thus imperative to look for ways and means to encourage and motivate learners to persist in their studies.

In order to devise ways and means to reach the unreached, the first objective was to investigate on the effectiveness of ODL. The result shows that learners find difficulties in progressing confidently in their learning process as ODL implies studying in loneliness and uncertainties. They are thus de-motivated and keep postponing their studies till they drop out of the course.

To understand the support that ODL learners are in need of, the existing tools used since the creation of distance education were analyzed with the objective of understanding the strengths and weaknesses of the different tools used across time. The outcome shows that, learners are different in their learning style and their ability of studying is not the same for everybody. Therefore lessons broadcasted by radio and TV could have been a tremendous support if the lessons are conveyed at a suitable time and pace, convenient to the geographically scattered learners. Interactions were seen to be lacking. But when it comes to the use of technologies with which interaction is possible, it has been seen that they have been used mainly as a communication tool in order to facilitate the administrative task. The pedagogical aspect is ignored. Most of the institutions are not taking advantage of the fifth generation of DE.

Prisons and prisoners' education in Africa is an abysmal and sad state of affairs. Literature reviewing the state of prisons in Africa, with the exceptions of Dissel (2001) and Wines (2005), is limited, mainly because prisons in Africa are diverse, complex, isolated and enclosed entities which makes them difficult subjects of study.

The Open University (UK) agenda for Africa is big and driven by strong conviction from within its ranks. It is the only British University dedicated to delivering learning inside Africa and has developed partnerships to deliver its innovative strategy to build capacity in higher education across the African continent. The UK's largest university is now involved in a wide range of projects across 14 African countries. For the ABLE-Ghana Project - Advancing business learning for employability in Ghana. The Open University Business School (OUBS) is working

with Ghana's leading business schools to ensure their courses prepare students fully for employment and entrepreneurship.

The case analysis looking at the prospects and challenges of applying ODL principles in African prisons highlights that online education holds strong future prospects for the design, teaching and learning, and delivery of online ODL in the unreachable contexts of African prisons. One can easily argue that Africa's education needs are far greater, and prisoners' education and reform would be the least of its concerns. But our analyses argues that harboring such mindsets are the biggest obstacles to the reforms and reintegration of African prisoners into society, particularly from a humane perspective. They should be given a chance to contribute to their societies and for many African prisoners education via ODL might offer the only chance to such a life.

The motivation to educate African prisoners should come from organisations like ADEA and UNESCO in encouraging every African government to take bold steps in setting up appropriate reform programs and policies within their legal framework and penal systems. Most African governments spend little on justice, and what little is spent goes mostly to the police and courts; prisons "are at the bottom of the heap", and very often simply forgotten. African governments need to create the institutional space, obligation and resources for their penal or prison systems to be legally obliged to offer educational opportunities to all prisoners, including those who are unsentenced, sentenced and young offenders (under 21 years old). This responsibility for prison education should fall within the remit of the appropriate government departments which can formulate several policy documents on the role of education in preparing offenders for employment on release from prison.

Undoubtedly, there are distinct challenges for educating and designing ODL materials for prisoners anywhere, but particularly so in Africa. The advent of new internet-based technologies has opened up possibilities but there are complexities and numerous challenges rooted in every possibility, and therefore should be adopted only after much scrutiny at every level. It does not take a lot of imagination to see how stressful the lives of African prisoners are, and unless they are given the infrastructural and emotional conditions to study, education will not happen.

6. Policy Recommendations

As education is an inalienable human right and is crucial for the realisation of other rights as well as for the expansion of human capabilities and the enhancement of human dignity, every Government should ensure that all citizens, irrespective of their geographical and cultural distances have adequate learning opportunities. With advances in technology, ICT and ODL have the potential of reaching even the most marginalised ones. ICTs in ODL are perhaps the greatest tool to date for self-education and value addition to any community's development

efforts in order to ensure that issues of educational equity and social exclusion rural communities are addressed.

Countries must have national ICT and ODL policies with clear visions and implementation frameworks similar to those in Botswana (Botswana ICT policy and the 1994 Revised National Policy of Education) as well as remote learner strategy.

In order to harness the power of technology, we must understand it very well. Therefore authorities must ensure that there is unit that follows the latest technological developments and disseminate them to the relevant institutions including those responsible for design and delivery of learning materials as well as teacher training. ADEA through the Task Force on ICT can help in this venture.

Relevant training must be provided frequently to all the persons (including designers, instructors, technicians, administrators) involved in use of ICT in education.

Inadequate ICT infrastructures in rural areas remain a major source for the digital divide in Africa and for under-performance of learners. Authorities must take up the challenge of bringing Internet networks in rural areas with adequate bandwidth that would the delivery of basic quality service needed for simple applications amidst high internet traffic demands.

As far as design and delivery of learning materials are concerned, there is a need to shift from “one size fits all” to “a unique size for every person” in order to increase the chance of the learners to succeed.

Bearing in mind the researches done regarding the capabilities of the technology, it is seen that synchronous and asynchronous tools have proved to be efficient in the learning process. Therefore, we suggest that, to reach the unreached, we need to have a proper learning environment online coupled by a generic pedagogical framework.

Additionally, if the teaching and learning activities are learner centered, there is more chance that the latter will be supported as per their needs. Lastly, backed up by educational theories and researches done in the field, we are convinced that, interactions should be encouraged: there will be collaboration, co-construction of knowledge, thus taking care of issues such as loneliness and uncertainties in the learning process. When there is interaction, learning takes place. With the ICT support in distance education, learning strategies should be devised in order to make learning an enjoyable, social experience with appropriate collaboration with tutors and peers. This model corresponds to the fifth generation of Distance Education of Taylor (1995).

A broad range of provision from learning a trade to developing job-seeking skills must be offered to support the difficult-to-reach people and prisoner’s rehabilitation within society when released. ODL can play pivotal role as evidenced by the experience of the Open University-UK.

Africa's education systems are at the heart of Africa's future and there is now an urgent need to revitalise ODL providers so that they play a bigger role on this future and in reaching the far ends of society to improve the chances for equal access to education for all.

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